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THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—10TH YEAR. SYDNEY: SATURDAY, FEBRUARY 24, 1923. No. 8.

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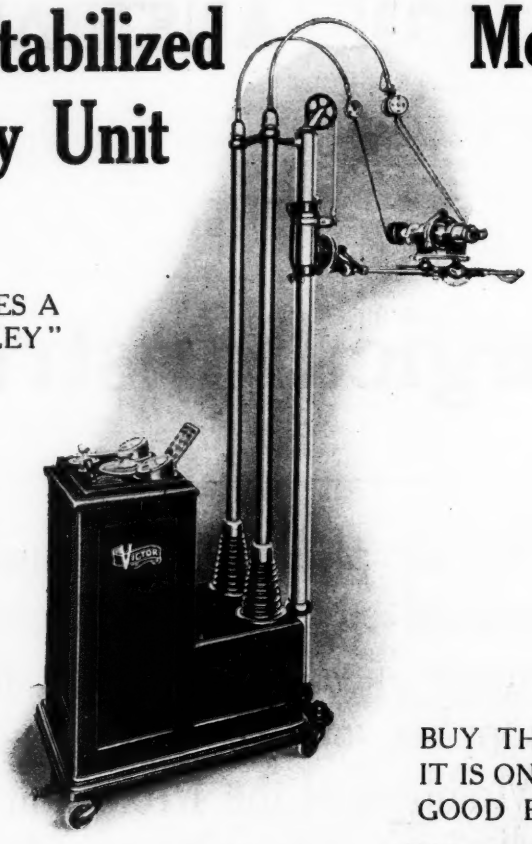

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A CASE OF PERI-ARTERITIS NODOSA.[1]

BY J. BURTON CLELAND, M.D.,
Professor of Pathology, University of Adelaide.

IN March, 1922, during the course of routine *post mortem* examinations at the Adelaide Hospital a case of *peri-arteritis nodosa* was met with in a young man, aged eighteen years. The patient had suffered from an obscure illness in which enteric fever was first of all suspected, but finally the provisional diagnosis of acute miliary tuberculosis was made, chiefly because no other more satisfactory diagnosis presented itself. The chief features of the case were the youthfulness of the patient, the history of some abdominal pain, the irregularity of the temperature, sometimes sub-normal, sometimes rising at night to between 37.8° C. and 38.3° C., occasionally reaching 38.8° C. or even 39.2° C., the rapid pulse, emaciation which soon became extreme, a slight cloud of albumin in the urine occasionally and, finally, the occurrence of fits and death.

At autopsy the first unusual lesion met with was on opening the pericardial cavity, when tortuous nodular branches of the coronary artery formed a striking feature as they coursed over the front of the right ventricle. The remarkable appearance here presented, unique in my experience, suggested the possibility of the case being one of *peri-arteritis nodosa*. On consulting a text-book this impression was confirmed, the clinical symptoms and the appearance presented by the heart being characteristic. Additional confirmation was found on examining the kidneys, in which were numerous peri-arterial thickenings with aneurysmal dilatations and areas of secondary infarction. A few small lesions were also met with in the liver.

Unsuspected, therefore, during life on account of the absence of nodules on the accessible superficial vessels, this case was only diagnosed and could only have been diagnosed by *post mortem* examination. Had no autopsy been performed, the condition would have been entered as acute miliary tuberculosis. Considering the small number of autopsies that are performed and the large number of deaths amongst the community in general, it is probable that other cases of this disease have passed through life to death without recognition.

An editorial article on *peri-arteritis nodosa* appeared recently in THE MEDICAL JOURNAL OF AUSTRALIA (October 28, 1922, page 504). This traverses the clinical symptoms, the *post mortem* appearances, histological details and the views as to the ætiology so fully that it is unnecessary to recapitulate these here. In view of this personal experience, however, I would like to accentuate certain points.

[1] Read at a meeting of the South Australian Branch of the British Medical Association on November 30, 1922.

Firstly, when features in a case suggest the possibility of this disease being present, if subcutaneous nodules occur along the course of superficial vessels, or if similar nodules are found on the mesenteric vessels during the course of a laparotomy, the diagnosis is easy. In the absence of such clues, one would submit that an obscure case of illness with an irregular, somewhat hectic fever, with symptoms suggesting, perhaps vaguely, typhoid fever or the protean manifestations of acute miliary tuberculosis, but failing to respond to the serological tests to these diseases, accompanied by a most extreme and rapid emaciation, may suggest the possibility of the presence of *peri-arteritis nodosa*. In such a case the occurrence of abdominal pain may indicate involvement of the mesenteric vessels or the presence of lesions in the kidneys may give rise to albuminuria, the appearance of blood in the urine or other symptoms suggestive of severe kidney lesions. A decided polymorpho-nuclear leucocytosis would also be of importance. I would emphasize particularly the irregular temperature and the extreme emaciation, together with some leucocytosis.

May I direct attention to another aspect of this disease. *Peri-arteritis nodosa* is commonly dealt with under the caption of diseases of the arteries. One usually looks upon such diseases of the arteries as being of a more or less local nature. Even syphilitic disease of the vessels, occurring so late after the general infection, is looked upon more as a local disease than a general one. As long as *peri-arteritis nodosa* is thought of as being such a local disease, cases are likely to be missed. It is obviously a general condition, presumably due to a living virus of some kind, giving rise to general systemic symptoms, comparable to some extent with those of acute miliary tuberculosis, typhus fever and syphilis.

The experiments of Harris and Friedrichs mentioned in the article in THE MEDICAL JOURNAL OF AUSTRALIA lead them to conclude that the causative agent is a filter-passer. It is interesting to note in this connexion that the lesions met with in the brain in experimentally conveyed typhus fever and in the skin rash of human patients are not unlike those that one would expect to occur in *peri-arteritis nodosa* in the early stages. Possibly the virus may be of the nature of *Rickettsia*, the supposed responsible agent for typhus fever; or possibly the organism may be a spirochæte, as there are distinct analogies with syphilitic lesions. It is important to remember that by the time an individual comes to autopsy most, if not all, of the lesions are far advanced in the process of healing or have given rise to such fibrotic degenerative reactions in their neighbourhood or to such vascular disturbances as to obscure the original appearance.

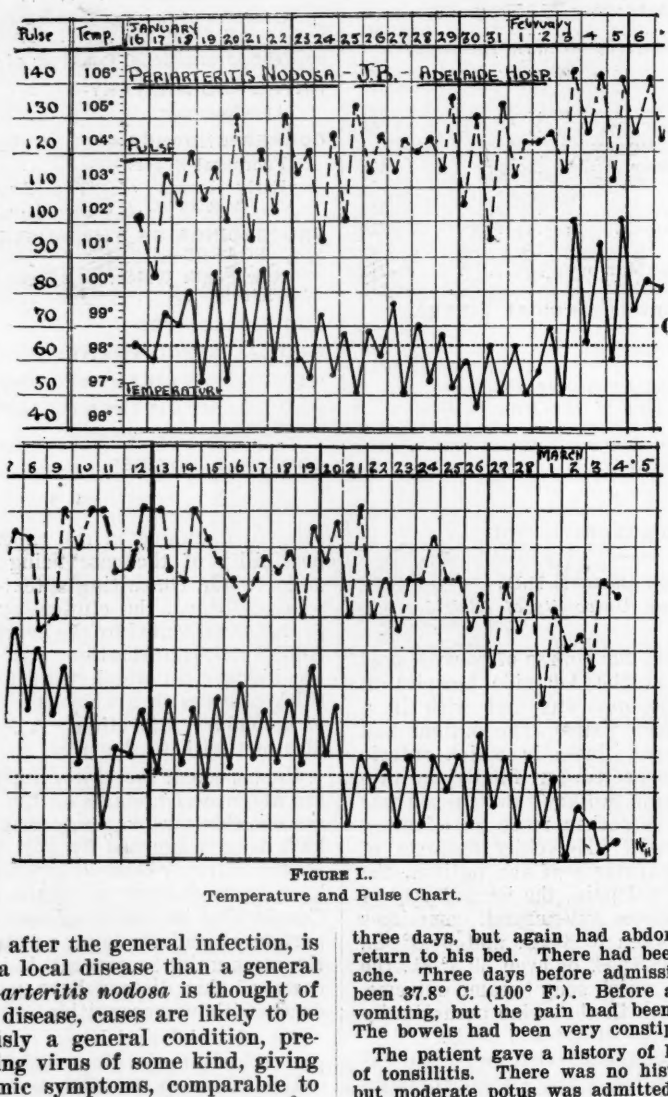

FIGURE I.
Temperature and Pulse Chart.

Clinical History.

For the clinical notes of this case we are indebted to Dr. de Crespigny, Honorary Physician to the Adelaide Hospital, under whose care the patient was, and to Mr. H. C. Hosking, his clinical clerk:

The patient, J.B., motor-car builder, a lad of eighteen years of age, born in this State, was admitted to the Adelaide Hospital on January 16, 1922, with a history of sixteen days' illness. He had first noticed headache and then had had slight abdominal pains and anorexia. At the commencement of the illness spots which came and went quickly, had appeared on the arms and legs. He had been in bed for five days; then, feeling better, he had got up and returned to work three days later. He had continued at work for three days, but again had abdominal pains and had to return to his bed. There had been no return of the headache. Three days before admission his temperature had been 37.8° C. (100° F.). Before admission he had had no vomiting, but the pain had been becoming more severe. The bowels had been very constipated.

The patient gave a history of having had three attacks of tonsillitis. There was no history of venereal disease, but moderate potus was admitted. There was no special family history.

On admission the patient complained of pains in the back and in the abdomen. The teeth were septic and decayed; the tongue was dry; the temperature was 37.5° C. (99.6° F.); the pulse was regular and of good volume and tension and its rate 112; the artery was apparently healthy;

the heart sounds were clear and the apex beat normal in position. No lesions were detected in the lungs. The abdominal muscles were somewhat on guard and there was slight general tenderness. The spleen was not palpable. The urine was acid, with a faint cloud of albumin; its specific gravity was 1,020.

After admission his pyrexia varied from remittent to intermittent, the pulse rate was consistently high, the tongue always furred and the bowels at first constipated, but later showed a tendency to diarrhœa. He experienced some aching in the limbs.

About the end of the fourth week, the patient became rapidly emaciated and seemed somewhat cyanosed. A week later purpuric spots appeared on his face. In his sixth week, he had a succession of fits, in which his mouth worked and he twitched violently. He bent over to the right, his eyes were turned up and to the right; he was unconscious, but did not cry out, bite his tongue or lose control of his sphincters. Following these fits there was weakness of the cheek muscles on the right side and of the muscles of the left upper eyelid and he was unable to wrinkle his forehead. During the sixth and seventh weeks the pulse rate and temperature were lower. On March 4, seven weeks after admission, the patient had another succession of these fits, similar to the preceding ones. His pulse became weak, the temperature fell to 35.5° C. (96° F.) and ten hours after the onset of the fits he died without regaining consciousness.

The urine throughout contained a faint cloud of albumin. Neither blood nor bile was detected.

The following laboratory examinations were performed:

On January 19 and February 4 (?) no response was obtained to the Widal tests with *Bacillus typhosus* and *Bacilli paratyphosi A* and *B*; blood cultures taken on January 23 and February 7 remained sterile. The leucocyte count was 17,700 per cubic millimetre on January 20 and 13,600 on February 8 and on another occasion the count was 20,000, of which 90% were polymorpho-nuclear leucocytes. Sputum examination on January 31 failed to reveal the presence of tubercle bacilli. A urine examination on February 14 revealed the presence of triple and amorphous phosphates, hyaline and granular casts and numerous mixed micro-organisms, chiefly Gram-positive cocci. The von Pirquet test was applied, but no response was obtained.

FIGURE II..
Section of the Wall of the Right Ventricle, showing periarterial and endarterial fibrosis in one of the nodular thickenings of a branch of the coronary artery.

Post-Mortem Examination.

The body was extremely emaciated and the eyes sunken. The pericardial sac contained 60 to 180 cubic centimetres of yellowish translucent fluid. The surface of the heart, exposed on incising the pericardium, presented a most remarkable appearance; in fact, owing to the extreme emaciation of the body, these changes could be seen before the flaccid pericardial wall was incised. The surface of the right ventricle towards the apex was traversed by somewhat tortuous elevations presenting a worm-like appearance with irregular swellings associated with these thickenings. On section the vermiform elevations were found to be thickened branches of the coronary artery and the bulgings aneurysmal cavities associated with these. At first sight, the appearance presented by the heart suggested chronic pyæmic foci in the heart wall with surrounding chronic fibrotic inflammatory reaction. The exact details of these lesions are as follows:

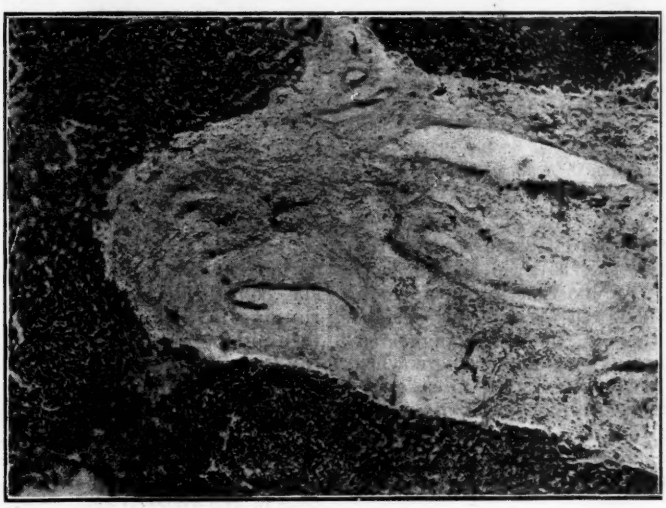

FIGURE III..
Section of Liver, showing a nodular thickening, probably of a branch of the hepatic artery, with much surrounding fibrosis.

On the wall of the right ventricle on its anterior aspect were two or three pericardial thickenings of irregular shape. In the substance near the surface

of this ventricle extending to the lateral border and to about 2.5 centimetres from the apex were irregular nodular elevations, some pale in colour, some flesh-coloured. On incision these elevations were found to be due to irregular thickenings of the walls of small branches of the coronary artery and of the surrounding tissues. In addition there were small aneurysmal dilatations filled with blood. A few bubbles of gas (*post mortem* decomposition) escaped on incising a group of these dilatations. On the posterior aspect of the right ventricle were several small nodular elevations near the inter-ventricular septum. The left ventricle showed some similar, small, pale elevations along the course of the vessels in the anterior wall at about 1.2 centimetres from the septum and near the apex; also on the lateral aspect and posteriorly were two or three small nodules, pale in colour and almost suggesting the tubercles of tuberculosis. The auricles appeared to be free from nodules. Beyond slight dilatation of the tricuspid orifice the chambers of the heart showed no pathological changes. In the commencement of the aorta were several lines of agminated linear elevations due to fatty degenerative changes in the intima.

The spleen weighed 127.5 grammes, was moderately firm, dark red in colour and appeared practically normal. The liver weighed 1,814 grammes. The surface of the left lobe showed the veins which pass under the capsule to be well marked. There was also a mottled appearance in places, due to diffuse, dark red areas. On section, these areas, scattered through the liver, suggested a slight degree of cavernous angioma. There were also occasional small areas filled with blood clot, the largest being about six millimetres in diameter. The small ones showed that the blood clot was encapsuled in a whitish membrane. The pancreas was normal. The suprarenals were firm and somewhat large.

The kidneys were both congested. There was some thickening of the capsules, which were slightly adherent all round and left behind on peeling a number of irregular pale elevations, somewhat suggestive in appearance of small abscess cavities. On feeling the surface numerous small nodules could be appreciated in the kidney substance. Section showed congestion, a pale medulla and in the cortex irregular whitish areas leading up to the nodular elevations seen under the capsule. Some of these areas represented infarctions. Studded throughout both kidneys, as seen in section, were irregular nodular thickenings of branches of the renal artery, many of them containing small aneurysmal dilatations filled with clotted blood. In one kidney as many as forty-five of these nodular thickenings could be counted on the longitudinally bisected surface; they were irregularly distributed, a few being present in the superficial cortex, but most of them in the intermediate zone. Their size varied from one to six millimetres in diameter.

The brain weighed 1,588 grammes. Beyond a small thickened area in the *pia mater* on the under surface of the temporo-sphenoidal lobe, nothing abnormal was detected macroscopically.

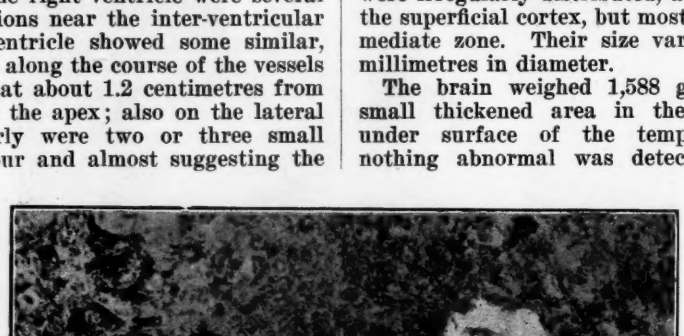

FIGURE IV..
Section of the Kidney, showing extensive periarterial fibrosis extending far into the surrounding tissues, as well as fibrosis within the muscular coat of the vessel.

Histological Examination.

A portion of the affected right ventricle of the heart was found on microscopical examination to exhibit an extensive fibro-cellular reaction round portions of the branches of the coronary artery. This reaction extends into the surrounding muscles, with consequent destruction of muscle fibres. In the centre of some of these areas irregular vascular channels without a definite endothelial lining are seen and are surrounded by a very extensive fibro-cellular zone, such as may be met with in organizing granulation tissue, containing large stellate connective tissue cells running in various directions. In places are moderate numbers of round cells, amongst which plasma cells occur. Some of these collections are remote from the vascular channel, while some are near it. In another section of the heart wall irregular vascular slits and a wide space—an aneurysmal dilatation—partly filled with *ante mortem* clot in which organization is commencing at the periphery, are seen in one affected area. The wall at one side of the clot has undergone considerable fibrosis with large stellate cells. On the opposite side the fibrosis is slight and part of the original wall is recognizable. In other places interstitial fibrosis is seen between the muscle fibres, probably from an adjacent vascular lesion.

In another section there is an extensive area of

fibrosis round vascular channels appearing as wide slits. In a lateral branch from this area is seen a normal-looking arteriole in section, with a slightly increased muscular wall, surrounded by a moderate amount of rather dense fibrous tissue with scattered capillary vessels filled with blood. The large vascular slit in this area shows the remains of a muscular layer, the lumen of whose vessel must have been considerably dilated. Inside this muscular layer is an extensive zone of rather dense fibrous tissue, the slit-like lumen being apparently devoid of endothelium. Outside the muscular zone the fibrosis extends a considerable way, displacing the muscle fibres.

To sum up, the appearances presented in the heart wall are those of very marked peri-arterial fibrosis of irregular distribution, amongst which are small collections of rounded chronic inflammatory cells. In addition, there has been in places a marked proliferation of connective tissue cells with resulting fibrosis on the inner aspect of the muscular coat which in parts has almost entirely occluded the lumen. Vascular slits traverse this new tissue, either representing portion of the original lumen or being newly-formed channels. Aneurysmal dilatations have occurred, some of which are more or less filled with clot.

In sections of the kidney some of the larger branches of the renal artery are found to be affected by a definite periarterial fibrosis. The remains of the muscular layer can be seen more or less distinctly, whilst an endarterial fibrosis has reduced the lumen and in some of the small vessels seems to have led to complete occlusion. As a result of such vascular occlusion infarcted areas are present, some of which are recent and are characterized by the intertubular capillaries being filled with stationary blood accompanied by numerous polymorpho-nuclear cells (suggesting a superadded infection). In such an area most of the renal cells have undergone coagulation necrosis, as few of the nuclei take the stain. In another infarcted area the lesion is evidently older, the tubes and inter-tubular tissues being barely distinguishable and the nuclei fragmented. In other parts there is a considerable amount of interstitial fibrosis or areas are seen with empty capsules, some a little dilated. There is general congestion.

In a section of the liver is noted considerable congestion and the involvement of several branches of the hepatic artery in the pathological process. Thus surrounding such a branch there is considerable fibrosis affecting the whole adjacent portion of Glisson's capsule. In some instances the lumen of the arteriole is completely occluded by fibrous tissue with irregular connective tissue cells and in other situations it is nearly occluded. Associated with one of these affected arteries, in which the lumen is reduced to a mere slit and the occluding tissue is tunnelled with several newly-formed vessels, is an aneurysmal dilatation partly filled by clot which is undergoing organization from the periphery as shown by numerous connective tissue cells.

No special lesions are recognizable in the spleen, which seems somewhat fibrosed.

Acknowledgements.

For the blocks from which the illustrations are produced, I am indebted to Mr. H. C. Hosking, the clinical clerk in charge of this case. Mr. Hosking, after taking full notes, prepared an excellent paper giving a description of the case and a discussion on the disease which was read before the Adelaide Medical Students' Society and later published in its *Review*. The microscopic sections were photographed by Mr. Hosking himself. I am also indebted to the editor of the *Adelaide Medical Students' Society Review* for facilitating the use of the blocks in this article.

INTERIM REPORT ON RESULTS OF DEEP X-RAY TREATMENT.

By H. Flecker, F.R.C.S.,
Honorary Radiologist, Austin Hospital, Melbourne.

As Dr. B. J. M. Harrison has already sketched the outline of the principles of deep X-ray therapy in a most admirable manner, it is my purpose in this paper to point out without repeating what he has written the great scope and possibilities which such treatment offers, illustrated by numerous examples of cases actually under treatment. The majority of the patients have benefited very considerably and, although seven months only have elapsed since commencing this series, the results are, despite many disappointments, sufficiently startling to warrant the belief that some are permanently cured, for at least many are clinically cured for the time being. A generation must elapse, however, before the supreme test, that of time, can be applied towards our conception of cure in malignant disease.

One remarkable feature of the discussion was a hint by a critic that: "It would be of great value if any investigation on scientific lines could be carried out in selected cases to determine the value of deep therapy!" Does the critic not believe that this has been done elsewhere on a very large scale for the past ten years at least on a scale which it would be impossible to reproduce here? Every phase of the question, biological, histological, physical, clinical, immunological has been and still is being most laboriously pursued in other laboratories with reference to deep X-radiation by such investigators as Kroenig and Friedrich, Dessauer, Seitz and Wintz and others and the results of their works are available to those who care to study them. In Central Europe the chief clinics are controlled by surgeons of great experience and repute, who do not hesitate to submit to X-ray treatment all patients whose lesions are regarded as suitable at the earliest opportunity after exhaustive clinical investigations have been made. No doubt the large proportion of successes obtained is due in large measure to a general recognition of the value of intensive X-ray therapy, so that patients are referred to this treatment at the earliest possible moment, without waiting for every other measure to be tried first. At some clinics surgeons prefer to trust their patients to the radiologist without operation, although in

most clinics it is still considered advisable to combine operative with X-ray measures. Team work between the clinician, physicist, pathologist and radiologist is most essential to insure the best results in each case. As long as the radiologist has to treat for the most part only advanced cases, often when every other form of treatment has failed, he cannot hope to reproduce the same proportion of successful results as are recorded elsewhere.

Quite apart from its value in research, an X-ray institute would be of very great value from an educational point of view. It is most deplorable that at the present time not a single lecture on X-ray therapeutics is delivered at the Medical School in Melbourne, whilst the recent syllabus of the Post-Graduate Course did not include a single demonstration on radiology. No wonder is it that the numerous owners of X-ray outfits are compelled to rely on the firms from whom they purchased their outfits, for guidance and instruction!

The histories of several patients with malignant and other disease are given below to illustrate the remarkable improvements which have taken place:

Sarcoma of Humerus.

Mrs. S. (Dr. Devine), aged thirty-eight years, prior to treatment had an extensive brawny induration of the left arm and shoulder extending from below the elbow to the chest and root of the neck which had been coming on gradually for the past six months, accompanied by a great deal of pain. No history of trauma was obtainable, although the swelling was preceded by pain lasting eighteen months and had been diagnosed as neuritis. Both the elbow and shoulder joints were fixed and rigid and the whole limb thereby rendered useless. A skiagram showed involvement of the greater part of the humerus with rarefaction of the greater tuberosity and distinct changes in the middle of the shaft. A histological examination of a piece of tissue taken from the region of the deltoid muscle revealed a fibrous reticulum with numbers of small spindle and round cells strongly suggestive of sarcoma. A diagnosis of sarcoma of the humerus was made from clinical, radiographic and histological appearances. Owing to its extent, even a scapulo-thoracic amputation was out of the question.

On July 27, 1922, she received a single intensive dose of X-radiation, a voltage of 200,000 being employed. Eight days later she was so excited with the marked improvement that she stopped me in the street to comment on the fact. By August 10 the swelling had not only almost disappeared, but the pain and stiffness had so lessened that she was able to do up her hair. By September 8 she had gained five kilograms (eleven pounds) in weight. By November 17 she was able to play the piano at an entertainment. When last seen, on January 23, 1923, there was no sign of recurrence, although a slight persistence of adhesions appeared to remain in the deeper structures. X-ray examination showed a considerable improvement in the appearance of the bone. She has had two doses in all, the second being given as a precautionary measure on September 13, 1922.

Lymphoma of Pharynx.

W.H., aged forty-seven years (Dr. G. A. D. McArthur), complained on March 16, 1920, of difficulty in swallowing for several months. On each lateral wall of the pharynx immediately behind the posterior pillars were two tumours about the size of an almond shell, each covered by mucous membrane, the margins being sharply defined.

On October 15, 1920, the tumours burst through the mucous membrane at their upper poles and extended upward into the naso-pharynx, covering the mouths of the Eustachian tubes. The patient was very deaf (the raised voice was heard at fifteen centimetres). A section of tumour was examined and the diagnosis of lymphoma was made.

On October 26, 1920, the tumour on the left side was removed, with restoration of hearing in the left ear.

On April 29, 1921, the deafness recurred in the left ear. The naso-pharynx appeared to be filled with growth, apparently from the tumour of the right side.

On June 7, 1921, the cervical glands on the left side were found to be enlarged.

Subsequently the glands of both sides of the neck, as well as those under the mandible, enlarged enormously, giving the patient a very peculiar appearance. The patient now complained of difficulty of swallowing, deafness and a discharge from the nose and was particularly uncomfortable from the choking sensation produced by the large masses. As his condition was regarded as hopeless, he was admitted to the Austin Hospital for Incurables.

Only one dose of X-radiation has been given to the patient, namely, on September 7, 1922. Diminution in size of the tumours was noticeable in two days, whilst the great bulk had disappeared within a fortnight. He was last seen on January 8, looking much better than I have yet seen him. The masses in the neck are just palpable, hearing is completely restored, the pharynx is practically clear and there is no discharge from the nose.

Glioma of Cerebellum.

H.S., aged twenty-one years (Drs. Webb and Rosenfield), had been ill for nine months prior to treatment, suffering from giddiness and vomiting associated with violent headache which had later been described as though his head was banged against a wet wall. The headache was apparently so severe that the patient appeared quite silly. In addition, papillœdema was present, leading to a condition of practical blindness. A diagnosis of glioma of the cerebellum was made and a decompression operation performed about the beginning of April, 1922, without appreciably relieving the symptoms. A *hernia cerebri* was left protruding below the external occipital protuberance.

At the time of the first exposure on July 13, 1922, the patient was brought in a car and had to be assisted to my room with considerable difficulty. However, a few weeks later he preferred to walk from the railway station, a distance of about half a mile, for inspection, when his whole attitude was noted to be changed. Arriving with a big smile, he stated that there was absolutely no headache whatever and that, although he vomited occasionally in the morning, this caused him no distress; his former air of stupidity was replaced by an intelligent interest in things about him and, although a diagnosis of optic atrophy had been made, he was able to see well enough to count fingers and to find his way across paddocks to visit his neighbours. He declared that his vision was improving. In all he has had two doses, the second on September 5, 1922. He was last seen on January 8, 1923, when there appeared to be no sign of retrogression.

Carcinoma of Œsophagus.

A male (Dr. Newland) was sent with a diagnosis of stricture of the œsophagus about the level of the cricoid cartilage. Although his weight was maintained, the stricture had so narrowed the œsophagus that only a trickle of fluid bismuth emulsion could pass through, whilst a small bougie could not be passed.

Treatment was commenced on August 17, 1922. Five days later the patient reported that he felt as though an india-rubber band had been removed from his gullet. A second dose was given on September 29, 1922, and as by that time a small bougie could be passed, this treatment was combined with radium, both topically and externally. On November 11, the patient was able to swallow well moistened cake and the like. A No. 16 urethral catheter could be passed, whilst a bismuth meal went down with very little sign of obstruction. On November 28, sixteen days after the third dose, Dr. Newland reported that swallowing was better than at any time since he first consulted him. When last seen on January 15, 1923, the patient still maintained his weight and condition and was able to swallow brains, soft pudding and similar food.

Carcinoma of Breast.

As illustrating the advantage of the greater penetration compared with the lesser of small outfits, the following case is instructive:

Miss S.C. (Dr. Devine), aged forty-two years, has had a lump in her breast for two years. This has been under X-ray treatment elsewhere since December, 1921, since when she has had weekly exposures up to Septmber 21, 1922. Although the growth is quite inoperable, this treatment appeared to be sufficient to prevent the condition spreading. The pathologist's report of a section of the growth is: "*Carcinoma simplex*, tending to scirrhus type." She has had two doses of deep X-radiation since, on November 6 and December 18, 1922. When last seen, on January 31, 1923, the large ulcer had healed and the large scab formerly present had completely disappeared.

The following illustrates carcinoma of the male breast which had formerly been treated with radium responding well to deep X-ray therapy:

R.R., male, aged thirty-eight years, first noticed a lump over the left breast in February, 1921. The breast was removed in February, 1922. He has had regular application of radium ever since, up to the beginning of October. When first seen by me, he had very numerous recurrences in the skin of the chest, below the axilla and above the clavicle, many of which had ulcerated as if burnt by radium and were covered with scabs. The first X-ray dose was given on October 24, 1922. When seen on November 23, 1922, he was doing very well; the ulcers were healing up, the scabs were falling off and the only evidence of many of the nodules were small, pigmented rings. On the whole, the patient was doing very well. A second dose was given on December 7, 1922. Judging by reports received on January 15, 1922, the patient appears to be going downhill, owing to metastases in the liver and elsewhere, although the recurrences in the chest are clearing up.

Metastatic Growths in Bones.

That even metastatic growths in bones may be favourably influenced is shown by the following:

F., aged forty-four years, had her left breast removed for scirrhus on May 6, 1920. A lump noticed a month or two previously was of the size of the top of the thumb. The pain started in the middle of the back. In March, 1921, it was so slight that she did not worry. However, this got worse until on February 20, 1922, paraplegia set in, preceded by a week of paræsthesia. A skiagram taken at this date showed a crushed body of the seventh dorsal spine, when a diagnosis of metastasis was made. The patient has been completely bed-ridden ever since, all the reflexes of the lower extremities being completely absent. The pain was very severe. In addition to rectal and vesical symptoms there was a large bed-sore, somewhat larger than the palm of the hand.

On July 18, 1922, the first dose was administered. Much distress was caused by the movement to and fro in the ambulance.

On July 30, 1922, the pain was rather less, so that less morphine was required. The plantar reflexes (flexor) could be detected in both feet.

On September 19, 1922, the second dose was given. The erythrocytes had actually increased from 4,250,000 to 4,500,000 per cubic millimetre. The ulcer was looking cleaner and was beginning to heal.

On November 21, 1922, the third dose was given. The ulcer was healing well. The plantar reflexes were elicited, with suggestion of return of deep sensibility. Unfortunately symptoms of ascending infection of the kidneys were present.

When last seen on January 6, 1923, the ulcer had healed to the size of a shilling. Unfortunately a great deal of pain of a rheumatic kind was still present and was probably of a toxic nature.

Rodent Ulcer.

The following case confirms the excellent results already reported by Drs. Molesworth and Harrison and refutes the teaching by another authority that such cases, especially if involving periosteum or bone, should not be treated by means of X-rays. Certainly the latter type of case does not appear to be influenced by the smaller machines.

C.C., aged sixty-five years (Austin Hospital), as the result of rodent ulcer has lost the whole of the projecting part of his nose with the disease involving the eyelids on both sides and extending on the face. The condition has been present for about twenty years. As the result of exposures on July 20, September 8 and December 12, 1922, the disease has entirely healed and the patient is now awaiting a new nose. Diathermy was inadmissible, owing to the proximity of the eye, whilst a cure by surgical means would have meant the sacrifice of both eyeballs. X-ray therapy has the advantage of avoiding the sacrifice of any healthy tissue. Pain was entirely absent throughout.

Lupus.

V.E., female, aged fifteen years, had considerable deformity of the cartilages of the nose resulting from lupus. When first seen she had numerous small ulcers of the mucous membrane of the palate extending almost to the uvula. She had been an inmate of the Austin Hospital for the past three years on account of this condition. She has had only one application of X-rays, on September 14, 1922. When seen recently the ulcers on the palate were quite healed. Small ulcers were present around each tooth, probably due to a pyorrhœal infection, for which she intends to be treated.

Tuberculous Disease.

I have not yet treated a case of tuberculous disease which has not responded to deep X-ray treatment. The following are illustrative of this condition:

Dactylitis.

P.G., male, aged two years (Austin Hospital), as the result of extensive tuberculous disease, has considerable deformity of the fingers of both hands. Prior to treatment there were several sinuses present in each hand and skiagrams reveal that the tuberculous process is very active.

One dose only has been given, that on September 27, 1922. When last seen, on January 21, 1923, the sinuses had completely healed and the process had apparently come to an end.

Cervical Adenitis.

Mrs. T., aged forty-one years (Dr. McLorinan), had had tuberculous glands removed from her neck two years previously. Upon examination the cervical glands on both sides had again become enlarged. The scar of her former operation was considerably thickened and somewhat of a disfigurement.

The first dose was administered on July 19, 1922. When examined on December 8, 1922, the glands were scarcely palpable, whilst the scar had become beautifully smooth and supple. Meanwhile, however, a small superficial gland had enlarged, for which a second dose was given.

In addition to these patients, many others have been treated with considerable benefit, such as the relief of pain and other symptoms, often with gain in weight *et cetera* in such cases as carcinoma of the uterus, gall bladder, colon, skin and so on. Nevertheless, there are many failures, many of which could be anticipated on account of the advanced stage of the malignant disease and the presence of cachexia. Unfortunately, disappointments are only too frequent, even when at first there appeared to be promise of good results.

I hope that this contribution will have the effect of an earlier consideration of the benefits to be derived from deep X-radiation, so that patients suffering from malignant disease will not be submitted to this process merely as a last resort. The treatment should not be a rival to surgical or other procedures, but is best considered as an adjuvant. Probably the best results will always be obtained by preceding operative treatment by X-radiation, with a repetition of the dose after operation.

SOME GYNÆCOLOGICAL EXPERIENCES IN SOUTHERN MANCHURIA.

BY ALEXANDER N. KRAKOWSKY, M.D.,
Adelaide, South Australia.

IN 1909, when I was appointed by His Majesty's Principal Secretary for Foreign Affairs to the post of Medical Officer to the South Manchurian Consular Body, with right of private practice, I came into close touch with the Chinese, mostly of the female sex.

My first experience was of a sad nature. A woman of about thirty-eight years of age complained of having a pain in the lower part of her stomach, so she told my nurse, who was a Japanese trained nurse and spoke a little English. After I had examined her, to which she very reluctantly submitted, I told her she was to be operated, as she was suffering with an ovarian cyst and that the tumour was too large to remain for any length of time without risk to her life. But she made no reply, only finished her dressing hurriedly and left my rooms as fast as her artificially-deformed feet would allow her.

A few days later a second woman of about twenty years of age came with her mother, who told me that her daughter had been in hospital in Amoy and the doctor there, also a European, had tapped a tumour and a large quantity of chocolate-coloured fluid had been removed. The doctor there had thought it to be of a malignant nature and thus considered it better to leave it alone for a time. Later an adhesive, small, multilocular cyst was found and removed; after eighteen days I discharged her. She gave birth to a healthy child on the eleventh month after the operation.

I have met ovarian cysts of all kinds in Manchuria. I will describe in detail a few of the most interesting cases.

A young girl of fourteen was brought to me by her father just before she was to be married. At the age of eleven a large mass had been noticed in the lower part of her abdomen. A sinus had formed at the umbilicus and discharged filthy, fœtid pus. Fearing the breaking off of the engagement, the matter had been carefully concealed by both parties and patient, but damaged, offensive cloth was found; the aggravation of the bridegroom and his family was very great, but the parties agreed to consult the European doctor, saying that if I could cure her, all would be well. The operation revealed a dermoid of the ovary adherent to the abdominal wall in front; after it had been removed the peritoneum was defective over a large area. This I filled in with omentum, sewing it into the gap. The patient did well and she was discharged in four weeks; and the family trouble was at an end.

Here is another woman who came in, bringing her grave clothes with her. She had been to three hospitals in different parts of China. She had been tapped and, finding chocolate-coloured fluid, they had declined to operate, fearing malignancy. A free, small, multilocular cyst was found and the patient did well; after three weeks she carried her grave clothes home again and has had a healthy child since.

Another case in which the fluid was chocolate coloured, was that of a young woman of seventeen. She had had an ovarian cyst, which had been diagnosed by an able foreign doctor. One day it disappeared and a month after the abdomen began to swell. Two cauliflower papillomatous growths of the ovary were found, with small implants all over the intestines. Both of the growths were removed, the implants left alone. She made a good recovery and was well at least three years after.

Chocolate-coloured ascitic fluid is not by any means of so grave an importance as reddish ascitic fluid. The latter is generally associated with malignancy, the former not.

I have had three eighty-pound tumours within three years and the chair bearers who carried the patients home again were congratulating each other as they were leaving the hospital on the difference there was between their burden on carrying in and their burden going out.

One of the difficult questions about ovarian cysts is the question of malignancy. One may open an abdomen and find an uncomplicated, non-adherent, small, multilocular cyst, which is removed entirely without tapping, and yet I have seen the patient again within nine months with inoperable malignant disease studded all over the abdomen. One has to be cautious about operating in such secondary cases, even in the way of an exploration. The patient of whom I have just spoken, was explored and sewn up again; on the tenth day she developed a pinhole-like fistula in the abdominal scar, from which ascitic fluid spurted to a distance of a couple of feet. It was not altogether a misfortune, as it acted as a safety valve and made the patient much more comfortable during the remaining months of life. But some of these patients are not so successful. Another patient, after much persuasion, got me against my better judgement to explore her abdomen. I had suggested operation three years before, but she declined and now the case did not wear at all a favourable aspect. At the operation I found myself confronted with a large, immovable, malignant mass; the abdomen was closed with difficulty. Two nights after the patient got up out of bed, roamed about the hospital and tore the abdominal wound open. The opening was closed by the malignant tumour and there was no peritonitis, but naturally it never healed up to the time of her death, which, to the delight of the patient and others, came at last four months after her admittance.

With regard to the large tumours, the question of preliminary tapping comes up. I am opposed to it if the patient is in good condition. In the first place, the withdrawal of a large quantity of fluid may upset the patient very seriously and in the second you may spread the contents of the cyst over the abdomen and, if you wait for some days, you may rouse a low grade of peritonitis in the neighbourhood of the puncture. If tapping has been frequently employed, you may meet dense adhesion. But if it is not done, then no anæsthetic should be given till the operator is ready for that work. Some of these patients, fortunately not

many, will suddenly stop breathing under the influence of the anæsthetic; they can be saved if the operator at once opens up the cyst and relieves the pressure; otherwise they will most certainly die.

A pregnant woman came, asking for relief; she had an ovarian tumour. She had refused operation. She returned when five months pregnant, but again refused operation. She was very big and had a great deal of respiratory and pressure distress. When near time one day the cyst burst internally and she died in a few hours undelivered.

Another patient in a similar condition was a European. A swelling was discovered in the left flank after labour and, as the patient had a raised temperature and was not doing well, I was asked to see her. At operation an ovarian cyst with a long pedicle with six twists was found adherent in the flank. A portion of the wall of the cyst was so adherent to the colon that it was left *in situ*. The patient made good recovery and was quite well some three years after.

These ovarian cysts may sometimes form curious adhesions. I had in hospital a Chinese woman with a cyst which was giving trouble after labour. I found that the cyst had acquired an omental pedicle and, suspended between its proper attachment and the new one, had rotated several times, both pedicles looking like umbilical cords. Fibroids are not unknown, but cannot be said to be very common and with one exception the tumours I have seen have been of moderate size.

Fibro-cellular tumours of the vagina are not excessively rare; in four years I have seen three. One was so large as practically to obliterate the vagina. As a rule these tumours shell out without a great amount of difficulty.

Lymphangiectasis of the vulva I have met, also elephantiasis of the vulva, both the sessile and the pedunculated variety.

With regard to venereal disease; this is terribly common, generally innocent as far as the women are concerned. Chancre, chancroids and gonorrhœa are very common, but as far as I know, pyo-salpinx and hydro-salpinx are rare. I say, as far as I know, for gynæcological work is still in its infancy and I am hardly in a position to make a dogmatic statement on the subject.

The condition of women in South Manchuria is rather a miserable one. The overwhelming majority of the women can neither read nor write and the life they live is almost bound up in eating, sleeping and household work, such as it is. They are bought and sold very much like cattle and up to very recent years it was the exception for a bridegroom to have seen his bride.

The result is that one meets with real tragedies. I think that I have seen at least five women either without uterus, which is bad, or without a vagina, which is worse. In the latter class I have seen the urethra patulous and dilated, having been used with the bladder as a vagina.

The cases of which I speak are congenital cases. I may mention in this connexion that it is not rare for female infants to be brought with a statement that there is no vagina. On examining them closely one finds that the labia are adherent and very little force suffices to separate these; all that is needed is a little cotton wool between them for a few days.

Allied to these cases are those where sloughing has taken place as a result of child-birth, prolonged and mismanaged. There may be merely a stricture of the vagina or the whole vagina may be contracted or entirely obliterated. In this case the uterus almost invariably undergoes hyper-involution. Then these patients get the most horrible fistulæ; the bladder may be gone, the front wall of the rectum destroyed or both. As a rule the floor of the urethra has likewise gone and it is very difficult to know what to do. Colpocleisis is no good if the urethral sphincter is not intact and, even then the operation may give rise afterwards to much trouble from phosphatic deposits. Occasionally they can be closed by a series of operations, but at best they are a very difficult class of case.

One patient came to me with a large vesico-vaginal fistula, which, however, had contracted and was so attached to the pubic bone as to act as a sphincter and a very tight one. This patient had also an urachal fistula secondary to the vesico-vaginal one. I found that she had been bought cheap by a syndicate of three men, who were trusting to my being able to patch her up, when she was to be sold at an increased rate.

Another of my patients had been bought out of the hills by a syndicate of thirteen men. One took a fancy to her and bought her from the rest, bringing her to me for a hæmorrhoid operation.

When the vagina is present, but generally contracted, I have had good results by incising the lateral walls, spreading the incision and then sewing into the gap a flap taken from the *labium majus* on each side. The Chinese woman has practically no hair on the *labia*, so that this is not a contra-indication to the operation.

I have not yet had a suitable case where the woman was willing to take the risk of a Sadoffskie's or Baldwin's or similar operation.

Prolapse is by no means rare and some of the total prolapses form large tumours between the legs. The operation that has been more often performed in the south of Manchuria than any other is the abdominal fixation and in suitable cases I am far from convinced that it is an operation which should be thrown on the scrap heap. Provided that the sutures are inserted well down on the anterior surface, the results as regards future pregnancies seem to be good. A perineorrhaphy may be done at the same time with advantage.

Carcinoma of the cervix and uterus is quite as common as in any other part of the world, but the patients rarely come to us in time for a radical operation, though palliative operations may help greatly, such as scraping and swabbing the cavity out freely with chloride of zinc or the use of the actual cautery. I have been forced to apply these frequently with great relief to the sufferers.

As regards the whole question of obstetrics, we were here still back in the dark ages. There are no native midwives worth calling by that name and any help at delivery is as a rule given by the "wise"

woman or the mother-in-law. The value of this help is shown by the number of catastrophes in labour.

Rhachitis or rickets is practically unknown in this part of Manchuria and in my five years I have not had a patient with a flat pelvis. The principal cause of delay in delivery is an unreduced occipito-posterior position. I have seen a woman die from this after having been five days in labour. I was called at the very last gasp, delivered the child in a few minutes, but the patient was too exhausted; moreover, there may have been some uterine rupture.

With the exception of this complication, the commonest cause of delay in delivery is a small round pelvis or *libiter* (uniformly contracted). Of the usually deformed pelves, I have seen one of a spondylolistetic nature. Often the child is large and it must be remembered that Chinese pelves are undersized as compared with Europeans. Generally a forceps delivery is all that is needed, but occasionally craniotomy and the use of the cephalotribe are required.

But this pelvic contraction often leads to great swelling of the external genital and passage and sloughing of the vagina to a greater or lesser extent is very common.

One woman whom I had considerable difficulty in delivering, owing to the great swelling, got a very bad contracture of the vagina. In her next pregnancy she came into my hospital and a successful Cæsarean section was performed. She again became pregnant, but within a few days of the time of labour my small hospital was robbed and wrecked by a band belonging to the "Three Dots" Society, her husband being one of the leaders in the attack. Despairing of her helpless condition, she hanged herself.

Transverse presentations are by no means rare and generally result in the death of the mother, though I know of one case which ended by spontaneous evolution. The Chinese have no idea of how to manage these cases. Breech and face presentations occur in about the same proportions as at home, but it is quite one thing to have a difficult face presentation in home surroundings and one in a ten-foot square room, three quarters of which is filled by a big Chinese bed.

I have said that we are still in the dark ages. Too often the doctor is called in as the last resort. I lost only one patient with a severe pelvic contraction. The patient was a young woman of twenty-five. There was extreme contraction and the conjugate measured about 6.25 centimetres (two and a half inches). The patient had been five days in labour and five so-called midwives had all taken their turn. Of course, it was a difficult and prolonged operation, but the child was extracted and I hoped that the mother might do well, although she already had fever. She died on the sixteenth day of puerperal sepsis after a hard fight for life.

Rupture of the uterus is by no means uncommon. Four cases have come into my hands in reasonable condition. The first ruptured during labour with marginal *placenta prævia*; the patient was treated by ergot and packing and recovered.

NOTES ON THE VITAMINS.

By SELWYN HARRISON, M.B., CH.M. (SYD.),
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THE modern science of nutrition demands an appreciation and understanding of its many aspects. Its structure is complex, but the foundations lie in proper selection of foods, so that deficiencies are supplemented by judicious blending. As recently as twelve or fourteen years ago we firmly believed that food in general was composed of the five elements, proteins, fats, carbo-hydrates, salts and water and that a suitably-balanced diet of them alone, in adequate amounts and proportions, was all that could be required for normal growth and development. Much water has flowed beneath the bridge of nutritional knowledge since then and we have come to realize that though proteins, fats, carbo-hydrates, salts and water are the bricks and timber of body building, other structural components are essential features. The new-found necessities are well named "vitamins," conveying the concept of livingness or vital force. They apparently exercise a controlling influence upon metabolism. Their chemical and physical composition has not yet been determined, but there is little mystery about their action. When a minute amount of fulminate detonates dynamite, the great bulk of the chemical and physical change is due to the explosive, but the unobtrusive part played by the detonator is none the less essential. Catalysts act the part of overseers or gangers on a job. Without unduly wasting their own energy, they direct operations and insure the work being done correctly and speedily. In their absence things become slack and inefficient. Of such, in crude analogy, are the vitamins. The way of their study was paved in 1910 by a Polish chemist named Funk, closely followed by Hopkins, of Cambridge, McCollum and Davis, with Osborne and Mendel, of the United States of America, as pioneers. Since then the fascination of the vitamins has fired the enthusiasm of countless observers and the amount of clinical study and laborious experimentation devoted to them is colossal. A mass of unquestionable evidence has been collected and the proofs are complete of the existence of at least three distinct types: (1) Fat-soluble A or anti-rhachitic vitamin. (2) Water-soluble B or anti-beri-beri vitamin. (3) Water-soluble C or anti-scorbutic vitamin. All are indispensable to proper functioning of the animal body and continued or severe restriction of them will cause disaster. They are of wide distribution in various fresh foods, but are liable to destruction by prolonged heating, drying or preserving processes. The animal kingdom is incapable of manufacturing them, being produced solely by the synthesis of the vegetable cell. The plant constructs its proteins, carbo-hydrates and vitamins; animals must get them ready-made or die. This is a fact of the utmost practical importance and has a tremendous bearing on the whole question of nutrition. The leaf is the laboratory of the plant where chemical construction occurs and in this respect is superior

to the seed in nutritive value. When the animal organism is receiving inadequate vitamin, some phases of the internal metabolism are disturbed, some essential cogs of the body machine are thrown out of gear. Many of the pathological conditions so produced have been known for centuries, for instance, rickets and scurvy.

Vitamin A.

Vitamin A is stored up in the liver and body fat when the animal is getting plenty from its food. Vitamins in human or cows' milk are derived from and are dependent upon the food of the lactating female. When vitamin A is deficient in quantity, retardation or abnormalities of growth may result, as the outward and visible sign of profound disturbances within. The effects may range from minor disabilities too vague to diagnose up to clinically recognizable rickets, characterized by (*i.*) head-sweating and restless sleep, (*ii.*) loss of muscle tone, (*iii.*) polyuria, (*iv.*) pallor, (*v.*) alteration of the bones of the skull. Bony deformities in the long bones and ribs are late manifestations of the disease. A deficiency of vitamin A is not the sole cause of rickets and it is therefore not a pure deficiency disease. Scurvy, on the other hand, ends inevitably in death, if not cured in time by a vitamin diet. Another deleterious effect of deficiency of vitamin A is a lowering of resistance to disease and predisposition to infection. Rats, mice and pigeons employed for experiments fell easy victims to infectious diseases, particularly of the respiratory tract. This calls to mind the association of tuberculosis and malnutrition and the beneficial effects of cod liver oil, milk, bone marrow and eggs. The onset of xerophthalmia as an accompaniment of arrested growth in the absence of the fat-soluble A factor is a further illustration of a varied sphere of influence. May there be some relationship also to malignant disease and the post-war epidemic of influenza?

Vitamin B.

Beri-beri is endemic where the staple diet is polished rice, as the process of polishing tears out the embryo of the grain. White wheaten flour, pure corn flour and other modern refinements of similar nature contain little or no vitamin B. Degeneration of nerves, with loss of tone and power, result from prolonged restriction of this factor.

Vitamin C.

For many generations the curative value of fresh fruits, green leaves and certain roots has been known. Dry seeds, such as wheat, maize, barley *et cetera* are inactive, but on germination the vitamin is produced or liberated from some inert precursor. The members of various Arctic and Antarctic expeditions have suffered from scurvy. Sir John Franklin, using a good lemon juice, found complete protection, while others, better equipped generally, suffered severely through depending on lime juice, which is vastly inferior to the lemon and orange. Scurvy was rampant in Vienna in 1919, owing to the shortage of fruit and green leafy vegetables and the use of dried milk in infant feeding. The cases showed the usual features: (*i.*) anæmia and loss of power, (*ii.*) gingivitis, (*iii.*) pain on moving the limbs. Early recognition and free administration of orange juice cured the majority of the patients.

The moral attached to a study of vitamins in general as applied to every-day life, is the further from Nature the greater the danger. We frequently console ourselves with the assumption that vitamin deficiency diseases are unlikely to occur in Australia, as the conditions of life are so favourable. It must be remembered that the full-blown, pronounced type of rickets, beri-beri or scurvy is not the only form. Signs and symptoms may be so slight as to escape notice. This borderland of disease represents the condition of thousands of our children and is a menace we must realize and actively combat. Like the fabled sea-god Proteus, who had the power of changing himself into an endless variety of forms and disguises, so faulty nutrition can manifest itself in infinite ways. Weight disturbance, neurotic, unstable temperament, lowered vitality and resistance to disease, disorders of dentition, the eye and respiratory tract and many more can be directly attributed to nutritional defects. Small deviations from the optimum composition of food may produce vast changes in the living cells and tissues. It has been proved over and over again that diets derived from miscellaneous sources, such as cereals, fruits, leafy vegetables, meat in moderation, supplemented with liberal amounts of clean, fresh milk from well-pastured cows, suffice to maintain satisfactory growth and health. These are facts of importance in contemplating the dietary of the expectant and nursing mother, as well as the growing child, the adolescent and the adult.

Reviews.

CHLOROFORM ANÆSTHESIA.

A STATEMENT of present knowledge of the pharmacology of chloroform such as that furnished by Dr. A. Goodman Levy in his work on cholorform anæsthesia[1] is very welcome. It fills a long-felt want, much less now, however, than formerly, when chloroform was the routine anæsthetic and ether the exception. It is so much more valuable from being handled scientifically, although the subject matter is set out in a readable text-book order. All of the important data are clearly stated, as it is the product of one who is at once a practical anæsthetist and a research worker.

The author starts with the chemico-physics of chloroform and then passes on to its physio-pathological action upon the organs and systems. The effects of oxygen-want and oxygen-repletion are well described. The causation of death due to chloroform and of that occurring during anæsthesia, but not wholly due to it, are discussed. Dosimetry and the apparatus employed, together with the methods of administration, receive due attention. The chapters upon respiration and circulation are well written. Upon the evidence of experiment it is generally accepted that, though heart muscle is profoundly intoxicated, even by low tensions of chloroform in the blood, a tension sufficient to occasion any myocardial paralysis never occurs under clinical conditions and therefore that sudden fatali-

[1] "Chloroform Anæsthesia," by A. Goodman Levy, M.D., M.R.C.P., with a foreword by Arthur R. Cushny, M.D., LL.D., F.R.S.; 1922. London: John Bale, Sons & Danielsson, Limited; Demy 8vo., pp. 159, with nine figures. Price: 7s. 6d. net.

ties (and nearly all are sudden) from chloroform never occur from myocardial intoxication *per se*. In the experimentally induced instances of chloroform syncope or sudden death, cardiac irritability is found to be by no means abolished. Accordingly it is recognized that in such instances the heart is brought to a standstill by abnormal or perverted innervation, the myocardium incidentally being more or less intoxicated. Recent research has been directed towards elucidation of the mechanism of such nerve action. Dr. Levy, experimenting chiefly with cats, had found it to occur from ventricular fibrillation and concludes that this is the mechanism by which clinical fatalities are wrought. There are, however, some clinical and experimental phenomena associated with chloroform syncope which cannot be interpreted in the light of this conclusion. Moreover, that fatal chloroform syncope from vagus inhibition of the heart can be demonstrated experimentally with dogs, cannot be denied. Reasoning by analogy from experimental results obtained with animals to clinical phenomena is open to pitfalls. Further investigation is necessary before definite conclusions can be made on this important matter.

The author with reason discards the vascular paralysis hypothesis of Leonard Hill, as well as the acapnia theory of Yandell Henderson. This book should be in the possession of every anæsthetist.

A TEXT-BOOK OF ZOOLOGY.

THE teacher of zoology scans with eager eyes each new elementary text-book on the subject, hoping that at last the ideal work has been written. But, alas, it still remains to be done. Professor Meek's "Essentials of Zoology"[1] is written for students of medicine and first-year students of science. The plan of the book is simple. A series of types is described, their place in the general system indicated and brief statements of general considerations are sandwiched between each successive pair, to bind the whole into an evolutionary story. The author in his preface claims to give the essentials "without undue bias as to the future studies of the student and without particular reference to the problems which happen to be the fashion of the moment."

This is all very well and is a pleasantly conservative attitude, but it is just this attitude which has always made the study of zoology anathema to the medical student. Show him the fascination and profit of the study and he is yours; weary him with strings of names and smother him with pawky morphology and he will cram enough to pass his examination and then forget all about it. Professor Meek relaxes his austere attitude in favour of endocrinology, to which liberal reference is made in several chapters. But the words adaptation, heredity and variation do not appear in the index, though the last page of the book grants a grudging mention to the fruitful modern study of genetics.

As usual, a selection of materials has had to be made and amongst the major groups omitted are the *Nemathelminthes*, the *Echinodermata* and the *Reptilia*. In a book intended for medical students the omission of the first group seems remarkable, while the increasing evolutionary importance of the echinoderms following upon recent embryological work makes some knowledge of this group essential for the science student.

The book is lucidly written and the fundamental facts and generalizations are emphasized by repetition wherever the context warrants it. The illustrations are simple, but adequate. They form good models for the student and thus serve a better purpose than the more elaborate drawings so often found in elementary text-books. The price, ten shillings and sixpence net, is refreshing in these times, since most books of a similar nature cost from a pound to thirty shillings.

[1] "Essentials of Zoology for Students of Medicine and First-Year Students of Science," by Alexander Meek, D.Sc.; 1922. London: Longmans, Green & Company; Demy 8vo., pp. xii. + 325, with 145 illustrations. Price: 10s. 6d. net.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

A MEETING OF THE SENATE OF THE UNIVERSITY OF SYDNEY was held on February 5, 1923.

The following degrees were conferred *in absentia*: MISS E. G. WILSON, B.A. (Queensland), and MESSRS. H. G. JONES (Tasmania) and L. G. WILSON (Queensland), Bachelor of Dental Surgery.

A letter was received from the Department of Education, announcing that MR. JOHN DAWSON, M.A., had resigned his position as a member of the Senate. It was decided that a letter should be sent to MR. DAWSON, recording the Senate's appreciation of his services.

An intimation was also received from the Department to the effect that His Excellency in Council, in terms of the provisions of the *University (Amendment) Act, 1912*, Section 3, had appointed MR. S. H. SMITH to be a Fellow of the Senate, *vice* MR. DAWSON (resigned).

MISS E. E. CHASE, B.Sc., was appointed Lecturer in Zoology.

A letter was received from ACTING PROFESSOR VONWILLER, forwarding a request from Sir Richard Threlfall, asking whether a quartz gravity balance which had been constructed by Professor Threlfall and Professor Pollock and used in the Physics Department in the University several years ago, could be sent to England for use by the British Admiralty. It was decided that the balance should be lent to the British Admiralty.

On the suggestion of PROFESSOR HOLME, Honorary Secretary of the New Portraits Committee, it was decided that arrangements be made for the Annual Commemoration to contain as part of the official proceedings the acceptance by the Chancellor on behalf of the University of the portraits of the Warden, Sir Edgeworth David and Professor J. T. Wilson.

An invitation was received from Saint Bartholomew's Hospital for a delegate to attend the eight hundredth anniversary of its foundation. It was decided to ask PROFESSOR JOHN READ, of the Chair of Organic Chemistry, who is at present in England, to represent, if possible, the University on that occasion. In the event of Professor Read being unable to act, it was resolved to ask PROFESSOR J. T. WILSON and, failing him, PROFESSOR GRAFTON ELLIOT-SMITH to be the delegate for Sydney.

A communication from the Commonwealth Department of Health, suggesting modifications in the regulations for the Diploma in Tropical Medicine, was referred to the Faculty of Medicine for report.

A letter from the Australian National Research Council, inviting cooperation at the Pan-Pacific Science Congress, to be held in Sydney and Melbourne in August next, was referred to the Faculties of Science, Medicine, Agriculture and Veterinary Science to appoint a joint committee to make the necessary arrangements.

The following examiners were appointed for the forthcoming Final Degree Examination of the Faculty of Medicine:

Medicine: PROFESSOR A. E. MILLS, DR. CECIL PURSER, DR. S. A. SMITH.

Surgery: PROFESSOR F. P. SANDES, DR. R. B. WADE, DR. H. S. STACY.

Obstetrics: DR. J. C. WINDEYER, DR. S. H. MACCULLOCH, DR. R. L. DAVIES.

Gynæcology: DR. FOURNESS BARRINGTON, DR. G. ARMSTRONG.

Clinical Medicine: DR. SINCLAIR GILLIES, DR. J. MACDONALD GILL, DR. E. W. FAIRFAX, DR. H. MARSHALL, DR. G. E. RENNIE, DR. H. J. RITCHIE.

Clinical Surgery: DR. G. H. ABBOTT, DR. J. M. CORLETTE, DR. GORDON CRAIG, DR. J. L. MCKELVEY, DR. J. MORTON, DR. A. ASPINALL.

Materia Medica: DR. A. W. HOLMES À COURT.

The Medical Journal of Australia

SATURDAY, FEBRUARY 24, 1923.

A Rural Health Service.

IN the course of a conversation between the Director-General of Health for the Commonwealth and the Federal Committee of the British Medical Association in Australia the proposition was advanced that an experiment might be carried out, having for its object the improvement of the health conditions of the rural population of Australia. The proposal took the form of establishment of a health service in two or three selected districts under the administrative control of a skilled medical officer. The district would be a relatively large one and, presumably, would cover the areas of several local authorities. In order that measures aiming at the maintenance of a high standard of public health and at the reduction of morbidity and mortality might be applied, it would be necessary to institute a liaison between the district medical officer and every general practitioner engaged in active practice within the district. The Federal Committee has on many occasions declared itself in favour of any movement in connexion with the prevention of disease which is based on sound, scientific principles. It has adopted on broad lines the scheme for the cooperation of the practising members of the medical profession and the health departments, provided that there is no intervention between the practitioner and his patient in regard to the treatment of disease. Hitherto no very definite suggestions have been elaborated to define the form of collaboration that would be desirable and advantageous. The Director-General of Health did not attempt to explain in detail how a district medical officer, acting under the control of the central health authority, would utilize the services of the general practitioners, nor what measures could be applied in sparsely populated rural districts to improve the general standard of health. In these circumstances the Federal Committee deferred its decision concerning this outlined scheme until a picture with shades, high lights and semi-tones could be submitted for consideration to the Branches of the Association in the several States. No committee, least of all a committee of medical practitioners from different parts of the Commonwealth, should be called upon to consider a principle without its application or to call into play imagination for the purpose of supplying details.

Preventive medicine has advanced slowly and a very short distance in urban districts. Sanitation, housing regulations, a regulated water supply and the institution of coordinated schemes for the control of special diseases have influenced the incidence and death rates from some of the infective diseases in cities and towns of large size in many parts of the world. Moreover, the community in cities and large towns has grown accustomed to the idea of prevention and has begun to demand it rather than the extravagant and often futile alternative of endeavouring to cure. In the country, however, the idea of the wholesale elimination of disease and of the communal control of health-giving factors has not yet been awakened. The man in the out-back districts realizes that he is handicapped in regard to medical attendance in that his doctor often resides at a great distance and cannot possibly apply the same constant attention that is habitually accorded to his urban brother. The local health authority is usually disinclined to carry out its obligations in regard to the most essential sanitary measures, because they cost money and do not seem to produce any tangible returns for the money spent. If money is available it is usually spent on the making of roads or on the erection of village halls and memorials. The central health authority at times endeavours to compel the local authority to carry out his sanitary obligations. As a rule, the central authority remains in sublime ignorance of the enormity of the local authority's offences in this direction. The proposal to plan an experiment in a few selected districts for applying modern methods of prevention in rural districts must be greeted with approval. There are certain difficulties in the initiation of such a scheme, difficulties of considerable magnitude. Further difficulties have to be met in the practical administration. The Fed-

eral Department of Health has undertaken to lend assistance in various branches of administrative work. It has carried out experimentally schemes for the combating of tuberculosis and more recently of diphtheria in Bendigo; it has established a section in the province of sanitation and another dealing with industrial hygiene. In each case the relations between the Commonwealth and the State Departments of Health have been maintained and the assistance rendered by the former is dependent on the consent of the latter and the intention to continue the campaign if the experiment proves successful. The experiment in rural preventive medicine would be undertaken by the Federal Department with the approval of the State Department concerned. But it should be a matter of agreement that, in the event of a favourable result, the scheme should be extended as a permanent undertaking. It is premature to discuss the machinery of a permanent and general application of the service at this stage. In the next place, arrangements would have to be made with the local authorities whereby the district medical officer should have power to adopt those measures that are prescribed by the central authority for the purpose of the experiment. Then there must be a voluntary and spontaneous collaboration between the district medical officer and the general practitioners in the district. The latter are in possession of much valuable information which could be made available for prophylactic purposes. Some of this information could be given without disclosure of the identity of the persons concerned. The ordinary duty of notification of notifiable diseases would be addressed to the district medical officer. Arising from this, the general practitioner would be required to make exhaustive inquiries and to take prescribed steps to trace the source of infection and to render this focus impotent. These services should be remunerated, not by salary, but by fixed fees for work done. The rural service must not be a public service with a host of departmental officers. It must be a voluntary service controlled and directed by one responsible, expert official. The one medical official would be assisted by non-medical official sanitary inspectors, but in view of the special difficulties obtaining in rural districts, he must be able to rely on the help of independent medical practitioners in the institution of reforms in sanitation, in the control of water for household purposes, in the disposal of house refuse, night-soil and house waste, in the clearing up of fly and mosquito breeding places, in control of the milk and meat supply, in the provision of proper facilities for the care of women during child-birth and of new-born infants, in the management of persons capable of spreading infection and in the general control of the known factors producing impairment of health. It will be seen that in rural districts the only feasible way of applying preventive measures is by requiring the local doctors to carry them out in the households of their private and lodge patients under the systematized direction of a district medical officer. The latter would be responsible to and controlled by the central health authority. If the scheme is efficiently and carefully planned, it should result in a demonstration of remarkable value.

THE USE OF TEXT-BOOKS.

THE medical student of to-day is handicapped in many ways. As the faults of parents are visited on the children, so the defections of the teachers of medical subjects lead to shortcomings in the students and consequently in the next generation of medical practitioners. With changing circumstances and altered conditions the virtues of yore becomes the vices of the present. When diagnosis was an art rather than a science and when pathology was a dogma rather than an axiom, it was necessary for the main part of medical education to be given by lectures in the course of which the teacher sought to impose his personality and his personal views on the receptive student. There was in those days relatively little to learn. The number of special branches of learning was limited and acquisition of a degree was not the final stage in the process of equipping a practitioner. The student continued to learn in the book of experience under guidance when he became an apprentice. Under favourable conditions he often became an erudite and reliable physician, skilled in clinical diagnosis and able to use his five senses. Those days are gone. Then came a period when the exact sciences began to pene-

trate into the domain of medicine. Chemistry and physics had their application in connexion with the body in health and in disease and biology joined these sciences in several situations. The physician stood before a dilemma; he imagined that he must either abandon his clinical sense, his intuitive methods of ascertaining the cause of his patient's sufferings, or he must refuse the newer doctrines of the test tube, the balance and the microscope. In this transition stage the student rightly was required to undertake practical work in the laboratory and to listen to the systematic lecture. He was given chosen text-books, from which he learned the accepted views in physiology and in medicine and the cast-iron facts of anatomy and of pathology. It was evident that this stage was but a transition. The investigations into the structure and function of the body and its component parts and into the changes wrought by extrinsic and intrinsic noxes gradually eliminated superstitions and vaguely founded hypotheses and replaced them by the securer tenets of bio-chemistry and bio-physics. This process must ultimately lead to the emergence of medicine as an exact science. But the time has already arrived when the makeshift means of teaching students must be abandoned. The student has many subjects to master and he is allowed five or six years in which to gain a working knowledge of them. The curriculum can be arranged in such a manner that the average student may be technically well trained by the end of the course. He cannot afford to waste time in listening to the vain efforts of inartistic speakers delivering what is known as the systematic lecture. It is very rare for a teacher to combine the gift of imparting knowledge with the ability to keep himself versed in modern doctrines. It is easier to learn facts from a well-written text-book than to gather them from the fragments spilled in a lecture. The teacher who concentrates his efforts in practical work and in endeavouring to apply the fundamental sciences to the problems of medicine, will achieve twice as much as the lecturer who attempts to wield his influence by means of dramatic gesture or the cracking of a joke. Text-books have the immeasurable advantage of permitting the student to learn at his own pace. The less intelligent can read and re-read until the subject in all its details becomes familiar. The quick student can forge ahead and use his spare time in delving into more advanced treatises. The text-book contains standardized teaching; it is better to standardize doctrines for students until with ripening experience they can question the accuracy of their early instruction without endangering their competence as practitioners. The systematic lecturer too often teaches views that are shared by few of his contemporaries and the student is apt to become bewildered and confused. The habitual use of text-books enables the student to acquire the gift of learning from current literature. It engenders a delight in reading and enhances the benefit that may be derived from books by competent authors. Moreover, the teacher who controls the knowledge acquired by his students from recognized text-books, is in a position to correct slovenly diction and the parrot-like use of examination phrases. A careful reader is always influenced by the accuracy of the authors whose works he studies. A lecturer is rarely successful in awakening in his listeners a sense of the extreme necessity of the proper use of words. Again, the student who masters the whole text-book and who is then required to apply the knowledge gained in this way to the specific instances of disease in patients, is less likely to be educated merely to pass examinations than is usually the case in students of the present time. The written word is better than the spoken word, because its permanency exposes it to criticism. One of the most urgently needed reforms in medical education is that of the restitution of the text-book as the most important instrument of teaching.

Current Comment.

CARCINOMA OF THE BONE MARROW.

ALTHOUGH in years gone by it was usually held that the presence of multiple cancerous deposits in bones was an expression of a cancerous diathesis, it was not until Virchow enunciated the fundamental principles of cellular pathology that the necessity was felt for further investigation. Virchow showed that cells of a given type could only take origin from cells of the same nature. In these circumstances it was natural that the blood stream should be looked on as being the medium through which dissemination into distant organs occurred.

In certain types of growth, accompanied by involvement of the lymphatic glands, the lymph vessels were regarded as being the channels through which the growth extended. Protagonists of the embolic theory maintain that minute particles of the primary growth gain access to the blood stream and are carried to distant organs, where their progress is arrested. Here the cells of the embolus proliferate and form what are known clinically as secondary nodules. That such a process does occur has been established beyond doubt. That it is the rule and not the exception, however, is denied by those who hold the lymph permeation theory. Goldmann and Williams both held that cancer cells often found their way into the blood stream by way of the thoracic duct. Stephen Paget in 1889 investigated this question and, in discussing what appeared to him to be a selective action in regard to the sites of emboli, he postulated a predisposition on the part of the tissues where emboli were most commonly found.

Sampson Handley, in his recent book, entitled "Cancer of the Breast," endeavours to apply the lymphatic permeation theory to metastasis from breast cancer in all its forms. He maintains that deposits in bones are caused in this way. He analyses the records of three hundred and twenty-nine autopsies performed at the Middlesex Hospital from the year 1872 to 1901, on patients who died from cancer of the breast. Records were found of deposits in bones or of spontaneous fracture in thirty-seven instances; including those in which the sternum and ribs were affected, the total was seventy-three. He points out that deposits probably occurred in many more, but were not noted because, as a rule, only in cases of spontaneous fracture was the attention of the pathologist directed to the bones. Deposits in the scapula and bones of the pelvis could be very extensive without causing any symptoms. The bones of the vertebral column likewise were not examined as a routine procedure. He draws two general conclusions from his investigations. First, the liability of a bone to cancerous metastasis increases with its proximity to the site of primary growth and in the second place he found that the bones distal to the knee and elbow escape cancerous invasion except in the rarest instances. In all instances of secondary deposits in the femur the pathological condition was present in the upper third of the bone a little below the base of the great trochanter. The point of election in spontaneous fracture secondary to breast cancer does not coincide with the usual positions of senile fracture of the femur, nor with the site of entry of the nutrient artery of that bone. He found that the humerus was usually invaded at its mid-point, in the neighbourhood of the deltoid insertion. This is above the point of entry of the nutrient artery and this he regarded as being against the embolic theory. Handley also points out that the site of election of invasion of the humerus is at the point where the bone lies nearest to the cutaneous surface; this is because permeation takes place from the lymphatic plexus of the deep fascia. He also lays stress on the relative infrequency of pulmonary metastases in patients showing bone deposits. He refers to the findings of Schmidt that small, cancerous emboli lodged in the lungs may grow along the capillaries and small pulmonary veins and may thus give rise to systemic embolic without producing any macroscopical changes in the lungs, but he thinks that such cases must be somewhat exceptional. He points out that the areas liable to cutaneous extension and bone deposits are similar in extent and concludes that the weightiest argument against blood infection is the entire escape of bones distal to the knee and elbow. These, he states, are just as liable to embolism as other bones, if not more so. The patient usually dies before the process has extended as far as this.

Dr. Alfred Piney has recently studied the whole subject in a very able and complete manner.[1] He refers to von Recklinghausen as the great exponent of the theory of metastatic spread by the blood stream. Von Recklinghausen's main contentions were as follows: First of all he held that metastases occurred in the interior of the medullary cavities and only reached the periosteum by extension from this situation. Secondly, he contended that masses in the sub-periosteal tissues were always in the region of the foramina of large veins. In the third place, he held that the cancer cells in the marrow lay in definite channels arranged similarly to that of the veins. He was not able to discover any such channels containing both cancer cells and blood corpuscles, but he held that these were blood channels, because no lymphatics were known to exist in the marrow and because no other channels than the invaded ones could be found in the affected areas. Both Erbslöh and Goetsch, however, observed masses of epithelial cells lying in channels which contained blood corpuscles.

Dr. Piney, in his endeavour to prove the embolic nature of origin of metastatic deposits, relies mainly on two conclusions. He endeavoured to determine whether or not lymphatic channels were present in bone marrow. Working on the lines laid down by Deyer and Noyes, he was able to inject the lymphatic channels of periosteum with Prussian blue ground up in a mortar with ether and turpentine. These lymphatics passed into the endosteum, but he was quite unable to find any connexion between them and the bone marrow. When injected into the marrow the stain passed into definite channels and emerged at the foramina from the veins. He then injected the blood vessels in the marrow with carmine gelatine and when this had become solidified by cooling, he tried to inject the lymphatic channels (if such existed) by the Prussian blue material. He was unable to make the latter mixture move along the marrow tissue. As a result of these experiments, he concluded that lymphatics do not exist in bone marrow. The other piece of evidence on which he lays great stress, is the fact that in several specimens taken from the marrow of patients dead of the disease, he was able to demonstrate the presence of cancer cells and red blood corpuscles in the same channels. In addition

[1] *The British Journal of Surgery*, October, 1922.

to these two main conclusions, Dr. Piney takes Handley's findings one by one and examines them in the light of his research. He holds that the apparent immunity of the distal bones of the limbs is capable of explanation on anatomical grounds. In adult bone marrow the red marrow persists only in the upper ends of the proximal bones of the limbs. He also shows that the vascular arrangement in this red marrow is very complicated, for the definite channels existing in the fatty tissue break up in the red marrow into a vascular arrangement that is not unlike an angioma. In these circumstances the rate of the circulation at this point is slower and arrest of the passage of cancer cells is more likely to take place. He further states that the deposits in marrow invariably lie in the red cellular and not in the fatty tissue. He draws attention to the condition of pseudo-pernicious anæmia associated with malignant disease. In analysing the blood in this condition, he points out that there is an interference with the erythropoietic system, causing a reduction in the numbers of the red cells (he assumes that this is due to trauma from the growth of deposits), but that there is something in the nature of a stimulating effect on the leucopoietic system, causing a leucocytosis. By analogy with the changes produced in the condition of the blood in Hodgkin's disease, which are produced by an extra-vascular lesion, he concludes that the changes occurring in the blood in malignant disease point to an intra-vascular lesion. The progressive anæmia of malignant disease leads to an increase in the amount of red marrow present in the bones and this results in further extension of deposits. Dr. Piney maintains that the insistence of Handley on the resemblance in extent between the areas liable to cutaneous nodules and those liable to metastases is really a weak point in his argument, in that many patients with cutaneous nodules show no signs of invasion of the bones and that all patients with carcinosis of the bones do not show signs of cutaneous nodules. Finally, he lays stress on the work of Schmidt, which Handley regards as indicating an exceptional rather than a usual condition.

In discussing this work, it must be acknowledged that Dr. Piney has made out a very good case. Much depends on the presence or absence of lymphatic channels in the bone marrow. He admits that the proof of a negative proposition of this kind is always difficult. In spite of this, the finding of cancer cells and red blood corpuscles in the same vessels is difficult of explanation by the holders of the permeation theory. It would seem at present that the latter have not proved their case and that the followers of von Recklinghausen are more correct than their opponents.

MENORRHAGIA IN YOUNG GIRLS.

MENORRHAGIA is one of the commonest and at the same time one of the most insidious conditions affecting young girls. In defining menorrhagia as an excessive flow at the menstrual period a difficulty is at once recognized from the fact that there is no standard as to what may be regarded as normal. A menstrual flow that is normal for a robust girl of the open-air, country type may not be normal for a city girl of more fragile build, who has possibly been brought up in unhealthy surroundings. Howard Kelly held that a duration of six days could not be regarded as normal unless it was quite clear that the patient's health, as judged from other data, was up to par. Halliday Croom, on the other hand, has stated that for general purposes an arbitrary limit can be obtained by observing the average time occupied by the period in a considerable number of women. He regards the function as excessive if it lasts for longer than six days. The test is a physiological one and the condition in each patient must be looked on as an individual problem for investigation.

Dr. Sarah Gray has recently discussed this subject.[1] She draws attention to the fact that menorrhagia as a cause of undue fatigue is frequently overlooked. She also lays stress on the fact that school medical officers have an unrivalled opportunity of investigating the condition as it affects school girls and of impressing on teachers the fact that persistent signs of fatigue are sufficient reason for bringing a girl for examination to the medical officer. The greater number of instances of excessive menstruation are not associated with any palpable or obvious structural change. Dr. Gray discusses the treatment of this form of the condition. She refers to the work of Tait and to his insistence on the impropriety of giving iron to a patient, however anæmic she might be, until the normal rhythm and normal quantity of the menstrual flow has been restored. She refers also to the efficacy of chlorate of potash as advocated by Binz and endorses Tait's statement in regard to its beneficial influence. The drug which finds most favour with her, is calcium. This has been advanced by Barr as the drug *par excellence* for menorrhagia. At first Dr. Gray controlled the administration of this drug by determining the amount of calcium in the urine. This method she soon discarded and had recourse to the rough-and-ready method of noting the time taken for the capillary circulation to return after pressure with the finger.

Dr. Gray makes her best point, however, in regard to the general treatment of the patient. According to the authors of the leading text-books, rest is of primary importance to girls suffering from menorrhgia. This, according to Dr. Gray, is not only unnecessary, but harmful. By insistence on rest girls are taught the habits of invalidism. More sleep and more leisure are necessary for girls who suffer in this way and "driving" at school lessons is to be deprecated. Rest is unnecessary except when excessive hæmorrhage has to be controlled. Exercise increases tone and improves the general health. If this dictum of Dr. Gray's were taken to heart by practitioners generally and if parents and teachers could by some means be made to understand its significance, there would be fewer chronic invalids.

[1] *The Lancet*, December 16, 1922.

Abstracts from Current Medical Literature.

BACTERIOLOGY AND IMMUNOLOGY.

The Production of Toxic Substances by Pneumococci.

A. M. CHESNEY AND A. B. HODGES (*Bulletin of the Johns Hopkins Hospital*, December, 1922) discuss the relationship of the toxic substances obtained from pneumococci to the phenomenon of intoxication in pneumonia in man. They consider that to explain many of the events which occur during the course of lobar pneumonia, it is almost necessary to assume that a substance or substances are formed capable of being conveyed by blood or lymph streams to other organs. Workers have unsuccessfully sought for such a substance in the fluid portion of cultures of pneumococci and in the material derived from the pathological processes. Most agree that the pneumococcus or pathological material may sometimes yield substances capable of producing anaphylaxis when injected intravenously into laboratory animals. The authors consider it more reasonable to associate the phenomena of intoxication in pneumonia with the active growth of pneumococci rather than with their death. They point out that examination of the pertioneal exudate of mice dying after intra-peritoneal injection with living pneumococci gives the impression that the pneumococci have grown and multiplied rather than that they have been destroyed in large numbers and yet the mouse has shown symptoms of intoxication. It appeared possible therefore that the toxic substances might be present in a culture of pneumococci which were growing rapidly, but that they might be no longer recognizable as such during the later stages of growth. The period during which pneumococci multiply at the maximum rate of growth in fluid media being twelve hours, this was considered a desirable time at which to seek the pneumococcus toxin. The media employed were beef infusion broth, normal human serum and defibrinated human blood. All were inoculated with Type I. pneumococci isolated from patients suffering from lobar pneumonia. Incubation was at 37° C. and specimens were removed at frequent intervals for filtration and for plating with a view to counting. The clear filtrates were injected in amounts of one cubic centimetre intrapertioneally into white mice. In no instance were any toxic effects observed in the mice.

Observations on Two Strains of Diphtheria Bacilli.

P. D. MEADER (*The American Journal of Hygiene*, November, 1922) reports the results of examination of two strains of *Bacillus diphtheriæ* isolated from patients succumbing to diphtheria infection after having received antitoxin at the onset of the disease in quantities usually sufficient to effect a cure. The strains were examined with a view to ascertaining any differences in the character of the toxins produced. One cubic centimetre of a saline emulsion of each strain killed a standard-weight guinea-pig in eighteen hours when injected subcutaneously. One strain was agglutinated by Type I. serum of Havens, the other was intermediate between Types I. and II.. The agglutination tests were confirmed by absorption. Two series of protection tests were carried out. In the first one minimum lethal dose of each toxin which had been mixed with 0.001 of a unit of standard antitoxin and allowed to stand for fifteen minutes, failed to kill when injected subcutaneously into standard-weight guinea-pigs. In a second series the antitoxin was kept constant and the amount of toxin varied. No difference in the degree of protection afforded was noted, except in one instance, which the author explains as probably due to greater susceptibility on the part of the guinea-pig rather than to difference in the toxin, as similar tests have not always reacted in the same way. Guinea-pigs injected with one cubic centimetre of a culture of the bacilli suspended in saline solution were protected by two units of standard antitoxin, but one unit and one and a half units failed to prevent death. The author attributes the fatal termination of the infections of the patients from whom the cultures were obtained, to some factor other than a difference in type of toxin.

Dissemination of Bacteria in the Upper Air Passages.

ARTHUR L. BLOOMFIELD (*Bulletin of the Johns Hopkins Hospital*, July, 1922) has investigated the dissemination of bacteria in the upper air passages. He concludes from experiments carried out that the organisms which are found in the normal mouth so uniformly as to constitute practically a normal flora, are not growing free in the saliva, but are in actual and vital contact with the mucous membrane. Cultures from the surface of the tongue before and after washing it for thirty minutes with water, before and after treating the tongue with saturated salt solution for fifteen minutes and before and after treatment with bicarbonate of soda for fifteen minutes showed no appreciable difference in type or numbers of organisms recovered. The author believes that the bacterial flora grow in the crevices in the epithelium covering the tongue and in the orifices of the glands which open on its surface and that, as they multiply, certain members are thrown off and removed as foreign particles while the source of supply remains. Any organism persisting on a normal mucous membrane for more than a few hours is regarded as being in vital relationship to the mucous surface. Foreign organisms placed on the tongue were removed after washing for five to ten minutes and autogenous organisms, when reintroduced, were eliminated in two hours. The saliva does not appear to favour or inhibit the growth of organisms in the mouth. Further experiments are to be undertaken in the hope of elucidating the "carrier" problem.

The Site of Specific Antibody Production.

W. E. CARY (*The Journal of Medical Research*, August-October, 1922) produces evidence to prove that the fixed tissue phagocytes in the liver and the spleen which destroy foreign erythrocytes, are also the produces of antibodies specific for these cells. Foreign corpuscles having been injected, tissue extraction methods were employed to determine whether or not the activity of large numbers of fixed tissue phagocytes in a given locality is attended by a local concentration of antibody. Thirty-four rabbits were injected with a 50% suspension of washed ox corpuscles in saline solution. Some received a single dose, others were injected on several successive days, while others again were given several injections and allowed a long rest period before undergoing a second course. Twenty-four of the rabbits lived, to be killed by bleeding from the carotid artery. The tissues were removed for extraction and the extract titrated for antibody content. A majority of the animals gave evidence of a concentration of antibody in the liver and spleen beyond that found in the serum. In the most favourable instances the difference was sixty-fold for the spleen and twelve-fold for the liver.

Serological Classification of Staphylococci.

T. G. M. HINE (*The Lancet*, December, 1922) presents the results obtained from an attempt to group staphylococci into serological types. The material examined consisted of ninety strains of staphylococci collected from various sources, including blood from septicæmic patients, urine and pus, while many were collected from patients suffering from broncho-pneumonia, tonsillitis, osteo-myelitis *et cetera*. The author divides the staphylococci into two main groups. The first group is the pyogenes group, whose members usually produce acid in mannite broth and whose colonies are of various colours, such as orange, fawn and yellow. The second is the epidermitis group, whose members usually do not produce acid in mannite broth and whose colonies are more often white than any other colour. When examined serologically the pyogenes group was found to contain three types. Type I. was represented by 90.2%, Type II. by 6.6% and Type III. by 3.2%. The epidermitis group contained two types, 60% belonging to Type I. and 40% to Type II.. In 30% of the cocci examined it was found necessary to confirm the agglutination tests by absorption.

HYGIENE.

The Public Health Nurse and Tuberculosis.

KATHERINE OLMSTEAD AND RENÉ SAND (*The World's Health*, September, 1922) discuss the duties of the public health nurse in relation to the anti-tuberculosis prophylaxis in the home. The duties of the public health nurse

must not be confused with those of the social worker. The duties of the latter, as seen, for example, at the tuberculosis settlement at Papworth, in Cambridgeshire, are very important. They include orientation regarding the sick, the making of inquiries regarding relief, the finding of suitable work for the patients, visiting the patient's family, especially while the patient is in hospital, organization of clubs, community houses, recreation centres *et cetera*, the finding of accommodation and work for patients leaving the colony. For the work of a nurse experience and infinite tact are necessary. Actual bedside nursing is perhaps the least important part of her work. She acts as an educational force. One of the chief factors in the diminished mortality from tuberculosis is the improvement in home and personal hygiene. This is largely due to the home instruction given by the public health nurse. Collective instruction can be given by means of classes, pamphlets, films and so forth. Individual instruction is best given by the nurse. By her aid the patient and his family are able to bridge the gap between theory and practice. The investigation undertaken at Framingham at the expense of the Metropolitan Life Insurance Company proved the value of the nurse as a detector of disease. In a town of sixteen thousand inhabitants twenty-seven tuberculous patients were under treatment on January 1, 1917. On November 1, 1918, after every family in the town had been visited by the nurse, one hundred and eighty-one patients were under medical supervision. Special training is necessary for public health nurses in tuberculosis work. Unorganized effort with unskilled women of untried ability will produce nothing but chaos. The nurse must be well trained in general nursing. She must be able to teach. Few teachers are born; most are developed. She must undergo training in the art of imparting knowledge. She must be a student of character under adversity. She must learn to differentiate between bad housing and bad housekeeping, inadequate budget and unwise expenditure, real intelligence and the apparent willingness of most patients to please the nurse by pretending to understand what she is talking about.

Poisoning by Benzol Carbon Tetrachloride Cement.

E. B. STARR (*The Journal of Industrial Hygiene*, September, 1922) has investigated the unfavourable effects resulting from the use of a cement in which was found a combination of carbon tetra-chloride and benzol. This cement is used freely in the millinery industry as a substitution for needle and thread. The author refers to the work of Hamilton on benzol poisoning. Most observers have dealt with late symptoms and with fatal instances. Little attention has been paid to the early symptoms. The occurrence of illness affecting a young woman in a millinery establishment led to an exhaustive inquiry into its causation. Forty-six girls were employed at this factory. They worked in partitioned-off compartments on the several floors of a five-storied building. They worked while sitting round tables with hats on their knees. Brushes for applying the cement were dipped into jars in the centre of the table. Symptoms appeared when the windows were closed at the onset of the cold weather. Of the forty-six girls, thirty-one were exposed to fumes. Twenty-seven actually handled cement and of these twenty-two were affected. The symptoms included headache, dizziness, nausea, weakness, loss of appetite, vomiting, frequency of micturition and a burning sensation in the throat and abdomen. In one instance spots resembling bruises appeared on the thighs. The heart's action was not affected, nor was there any interference with the menstrual function. The author attributes these symptoms to the benzol fumes rather than to any effect from the carbon tetra-chloride. He refers to the heavy nature of the vapour from carbon tetra-chloride, which is a heavy, colourless liquid. Toxic symptoms have been caused by its inhalation when it has been used as a shampoo. The author reviews the work of other observers on benzol. Legge regarded hæmorrhage from the mucous membrane of the gums and nose as an early symptom. The author claims that well-defined symptoms are produced long before hæmorrhage occurs. As a result of experiments on animals he claims that benzol fumes should not be allowed to accumulate in workrooms to an extent greater than one part in one hundred thousand parts of air. Forced general ventilation of workrooms should be undertaken and the air should be removed in a downward direction through floor gratings. Warning notices in regard to ventilation should be printed on all containers holding benzol for factory purposes.

Work for the Tuberculous.

T. B. KIDNER (*Archives of Occupational Therapy*, October, 1922) relates the experience of investigators in the United States of America in dealing with the question of work for the tuberculous during and after cure. In many sanatoria the exercise prescribed for patients is limited to walking. The author points out that this does not provide sufficient mental occupation. The patient who is bored, has neither a good appetite nor a good digestion. He refers to the conditions obtaining at White Haven, Pennsylvania, where domestic duties and duties connected with farm and garden are provided. Tranquility of mind is essential. This can be induced by suitable occupation. In choosing work for a patient, his physical condition must be the primary consideration. His mental and manual capabilities must next be considered, as well as his tastes and interests. Occupational therapy must be controlled by the physician, for there is hazard in overdoing. Many forms of arts and crafts work are suitable. Any occupation which entails prolonged use of the pectoral muscles, should not be undertaken by patients. The use of machinery for the laborious part of some occupations should be insisted upon. The author discusses various occupations from the point of view of three classes of patients: firstly, those confined to bed; secondly, those who are "semi-ambulant" and those who are able to walk about. He refers to the self-improvement studies and pre-vocational training courses that were organized for disabled soldiers. Here the physician has the benefit of the opinion of an expert vocational adviser. The energies of the patient are directed towards an occupation which will be suitable to him on his discharge from hospital.

Industrial Ophthalmology.

V. E. VAN KIRK (*The Journal of the American Medical Association*, September 16, 1922) publishes a survey of twenty-five thousand instances of injury to the eye occurring in a steel mill employing eight thousand men. The period under review was twelve years. The author refers to the initial difficulty experienced in securing the cooperation of the employees. The type of goggles worn by employees was selected in accordance with the nature of each man's work. It is necessary to have goggles inspected by an ophthalmic surgeon. The weight of frames and thickness of glass which are necessary may show considerable variation. The glass should always be plane glass. The use of suitable goggles has resulted in the saving annually of the sight in one or both eyes in twenty or twenty-five instances. Discharge from the works was the penalty for failure to wear goggles. A trained nurse was always in charge of the first-aid station and a physician was on duty in the daytime and on call at night. If a foreign body could not be removed with a swab, "Phenacain" was instilled into the conjunctival sac, together with some mercuric chloride ointment and a patch bandaged over the eye. The man was seen at the next visit of the ophthalmic surgeon. It was found necessary to remove all stained and devitalized corneal tissue at the time of removal of the foreign body. A patch was subsequently worn over the eye for twenty-four hours. Corneal ulceration occurred in only seven instances when this treatment was adopted. When the foreign body has been removed from the vitreous a guarded prognosis must always be given, for subsequent chorioiditis of low virulence frequently destroys sight. Patients with burns of the eye should always be admitted to hospital. The author holds that industrial ophthalmology is concerned with more than accidents. The correction of errors of refraction under cycloplegia is the next step to be taken. The increased efficiency will more than compensate for the cost. The author found that 10.5% of a large number of railway employees suffered from subnormal vision to such an extent that it made them unfit for their occupation.

British Medical Association News.

MEDICO-POLITICAL.

MEETING OF THE FEDERAL COMMITTEE.

A MEETING OF THE FEDERAL COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION IN AUSTRALIA was held at the Medical Society Hall, East Melbourne, on February 7 and 8, 1923, MR. G. A. SYME, the Chairman, in the chair.

Representatives.

The following representatives of the several Branches were present:

New South Wales Branch: DR. R. H. TODD, DR. J. ADAM DICK, C.M.G..
Victorian Branch: MR. G. A. SYME, DR. R. H. FETHERSTON.
Queensland Branch: DR. W. N. ROBERTSON, C.B.E., DR. J. LOCKHART GIBSON.
South Australian Branch: DR. F. S. HONE, DR. H. S. NEWLAND, C.B.E., D.S.O..

Apologies for non-attendance were received from DR. W. W. GIBLIN, C.B., and DR. E. BRETTINGHAM-MOORE, representing the Tasmanian Branch.

DR. F. A. HADLEY, being unable to attend, sent in a proxy in favour of DR. H. S. NEWLAND, while DR. W. P. SEED sent in a proxy form in favour of DR. R. H. TODD.

Appointment of Office-Bearers.

MR. G. A. SYME was re-elected Chairman; DR. W. N. ROBERTSON was re-elected Vice-Chairman; DR. R. H. TODD was re-elected Honorary Secretary and Treasurer. DR. W. H. CRAGO was again appointed Honorary Auditor.

Congratulations to Dr. Earle Page.

On the motion of DR. R. H. TODD, seconded by DR. J. A. DICK, it was resolved to send a message of congratulation to DR. EARLE PAGE and SIR NEVILLE HOWSE on their election to Parliament.

Incorporation of Overseas Branches of the British Medical Association.

THE HONORARY SECRETARY read the new Articles and By-Laws of the British Medical Association which had been introduced for the purpose of enabling Branches of the British Medical Association outside the United Kingdom to be incorporated without interfering with their rights as Branches of the Association and for the purpose of forming Federal Councils which would also have the power to become incorporated under the *Companies Acts*. He also read a draft Model Form of Memorandum and Articles of Association received from the Council of the British Medical Association for adoption by Branches desiring to become incorporated, letters explaining this draft and the Form of Agreement between an incorporated Branch and the British Medical Association which had been adopted by the Representative Body.

The draft Memorandum and Articles of Association were approved, subject so far as the Memorandum was concerned to any amendment that might be found to be necessary.

In his letter accompanying the draft Articles of Association the Solicitor of the Association had pointed out that Mr. Colquhoun Dill, the Counsel who had drafted the document, had purposely made the Articles skeletonic, merely embodying those provisions that were necessary to define the relations between the parent body and the incorporated Branch. All other matters affecting the management of an incorporated Branch would have to be governed by local requirements. It was held to be of importance that the Articles should provide for the power to make by-laws and that only those provisions which would be regarded as permanent, should be included in the Articles. The Branches desiring incorporation would have to complete the Articles and make their own by-laws. As the conditions did not vary considerably in the several States of the Commonwealth, the advisability of uniformity of the Articles and By-Laws for the Branches in Australia was emphasized. It was therefore decided that the Honorary Secretary should arrange with Mr. Tress for the drafting of model Articles and By-Laws for the use of the several Branches of the British Medical Association in Australia and that each Branch should be asked to forward to the Honorary Secretary a copy of its regulations for the purpose.

Cooperation of the Medical Profession with the Commonwealth Department of Health.

By arrangement DR. J. H. L. CUMPSTON, the Director-General of Health, attended the meeting and discussed with the Committee the progress of the activities of the Health Department during the past year. Referring to the work of the three experts of the International Health Board of the Rockefeller Foundation, Dr. Cumpston mentioned that a fourth member of the International Health Board, Dr. Frederick F. Russell, the Director of the Public Health Laboratory Service, would spend two or three months in Australia, during which time he would engage his attention on the problems connected with enteric fever. He gave a favourable report on the progress that had been made in the establishment of branch laboratories in various parts of the Commonwealth. In addition to the campaign against tuberculosis which had been instituted in Bendigo, further organized effort directed against diphtheria was in progress.

Dr. Cumpston offered certain suggestions for future work, but pointed out that in view of the fact that the appointment of Ministers to the Commonwealth Government was then pending, he merely presented these proposals as tentative and as the basis for general discussion. In the first place, it was suggested that each Branch of the British Medical Association in Australia be asked to approach each part-time medical officer of health with a view to obtaining a report on intestinal infective diseases in his district and, after consultation with the local engineer, on the best means for the control of these diseases. These reports could then be forwarded to the Commonwealth Department of Health, where they could be correlated to form the basis of a discussion on the subject at the Australasian Medical Congress (British Medical Association). It was evident that the incidence of enteric fever and diarrhœa varied considerably in different districts and that before any remedy could be found, more exact information would have to be collected. The discussion at Congress would be rendered more valuable if the Federal Committee could utilize its machinery for the collection of this information.

The second proposal was closely allied to the first. In view of the completion of the hookworm survey throughout the Commonwealth, it was held to be desirable that in one or more selected rural areas permanent measures for the control of the disease should be instituted. Dr. Cumpston asked the Committee to consider the suggestion of such an experiment being carried out under a full-time medical officer of health. He further suggested that it might form part of a complete rural health service which would serve to demonstrate and determine the most efficient system of rural health services generally throughout the Commonwealth.

In discussing the progress that had been made in connexion with Dr. A. J. Lanza's work, Dr. Cumpston spoke of the encouragement his Department had received from the proprietors of factories and industrial firms. There was at present no official recognition of factory surgeons and of medical advisers of industrial undertakings. He therefore suggested that the Federal Committee might examine the question of the growth of the factory surgeon phase of medical practice and consider the possibility of regulating this practice so that those who undertook the work of factory surgeon or medical advisers to large firms, might be competent to carry out their duties to advantage.

MR. G. A. SYME expressed the indebtedness of the Federal Committee to Dr. Cumpston for having discussed many matters of importance with them.

Several members asked questions in connexion with the points raised. In regard to the qualifications held to be essential for a factory surgeon, Dr. Cumpston stated that he experienced considerable difficulty in making definite suggestions. It would be admitted that a special course of instruction in industrial hygiene and in sanitary science was obviously a valuable asset for anyone occupying these positions. In the course of further discussion it was recog-

nized that State control was inadvisable, particularly in connexion with the medical advisers of industrial undertakings.

It was held that the essential for success in this class of work was the cultivation of a professional opinion. Until medical practitioners realized the practical importance of special training in carrying out this work, difficulty would be experienced in discovering a sufficient number of medical practitioners willing to undergo the necessary ante- or post-graduate training. Much could be achieved if the State would require of all industrial employers returns of the incidence of occupational and other diseases. It was necessary to distinguish between industrial hygiene, the supervision of which was carried out by medical practitioners, and factory inspection which was in lay hands.

After Dr. Cumpston had withdrawn, it was suggested by the Honorary Secretary that the best means of giving effect to the proposals dealing with the control of intestinal infective diseases in the rural districts would be to place the matter in the hands of the several Branches. It was therefore resolved to request each Branch to collaborate with the President of the Section of Preventive Medicine of the Australasian Medical Congress (British Medical Association), Melbourne, 1923, in an inquiry into the incidence of intestinal infective diseases in rural districts and the means for their control.

It was decided to postpone discussion on the question of the establishment of rural health services pending more complete information from the Director-General.

A short discussion took place on the best methods of improving the professional equipment of factory surgeons. The views of the members were expressed in the following resolution:

> That the question of the qualifications of factory surgeons and industrial medical advisers be deferred for further consideration at the next meeting and that in the meantime the Branches be asked to consider the question with a view to the Committee being fully advised.

Australasian Medical Congress (British Medical Association).

Patrons.

A letter was read from HIS EXCELLENCY THE GOVERNOR-GENERAL, LORD FORSTER, accepting the position of Patron of the Australasian Medical Congress (British Medical Association).

A letter was also read from HIS EXCELLENCY THE GOVERNOR OF WESTERN AUSTRALIA, accepting the position of Patron.

Vice-Presidents.

A letter was read from SURGEON-CAPTAIN E. T. P. EAMES, Royal Australian Navy, accepting the position of Vice-President of Congress.

The question of amending Regulation 9 was discussed in connexion with a motion to the effect that any member of a Branch of the British Medical Association in Australia who is a Vice-President of the British Medical Association, shall be *ex officio* Vice-President of the Australasian Medical Congress and a further motion to the effect that the Chairman and ex-Chairmen of the Federal Committee also be Vice-Presidents. It was therefore resolved that Regulation 9 be amended to read as follows:

> 9. The following, subject to their acceptance of the position, shall be appointed by the Federal Committee to be Vice-Presidents, namely: The Past Presidents of Congress [Intercolonial Medical Congress, Australasian Medical Congress, Australasian Medical Congress (British Medical Association)], any Vice-President of the British Medical Association who is a member of a Branch of the British Medical Association in Australasia, the Chairman for the time being and all ex-Chairmen of the Federal Committee of the British Medical Association in Australia, the Director of Naval Medical Services, the Director-General of Army Medical Services and the Director-General of Health of the Commonwealth, the Director-General of Army Medical Services and the Director-General of Health of the Dominion of New Zealand and a representative of each Branch of the British Medical Association in Australia and New Zealand chosen by the Council of the Branch.

The effect of this amendment will be that DR. W. T. HAYWARD, C.M.G., who is a Vice-President of the British Medical Association and who is also an ex-Chairman of the Federal Commitee, will be *ex officio* a Vice-President of Congress.

The amendment entailed the deletion of the words, "The Director-General of Naval Medical Services" (of New Zealand), in view of the fact that the position is non-existent.

Honorary Members.

MR. SYME reported that in accordance with Regulation 5 the Executive Committee had nominated the following for appointment as Honorary Members of Congress:

- DR. W. J. YOUNG, Lecturer on Bio-Chemistry at the University of Melbourne.
- DR. H. R. SEDDEN, of the Veterinary Research Institute, Melbourne.
- PROFESSOR T. BRAILSFORD ROBERTSON, Professor of Physiology at the University of Adelaide.
- DR. L. J. BULL, Assistant Director of the Government Pathological Laboratory, South Australia.
- DR. W. A. SAWYER, Bacteriological Expert, International Health Board.
- DR. A. J. LANZA, Industrial Hygiene Expert, International Health Board.
- DR. W. C. SWEET, Director of the Hookworm Campaign, International Health Board.
- COLONEL F. F. LONGLEY, Sanitary Science Expert, International Health Board.
- MISS F. E. WILLIAMS, Bacteriologist, Walter and Eliza Hall Institute for Research in Pathology and Medicine, Melbourne Hospital.

It was resolved that they be appointed Honorary Members.

MR. SYME also reported that the following prominent members of the medical profession had been invited to attend the Congress: SIR WILLIAM MACEWEN, C.B., President of the British Medical Association, had intimated that he wished to accept, but that he would not be able to give a definite reply for a short time. PROFESSOR C. J. MARTIN, F.R.S., Director of the Lister Institute of Preventive Medicine, regretted his inability to accept the invitation. DR. CHARLES PORTER (President of the South African Medical Congress), PROFESSOR F. C. MADDEN, O.B.E. (Professor of Surgery at the Egyptian Government Medical School, Cairo), SIR HAROLD J. STILES, K.B.E. (Regius Professor of Clinical Surgery at the University of Edinburgh), SIR ROBERT JONES, K.B.E., C.B. (of Liverpool), SIR ARTHUR KEITH, F.R.S. (Hunterian Professor of the Royal College of Surgeons of England), SIR BERKELEY MOYNIHAN, Bart, K.C.M.G., C.B. (Professor of Clinical Surgery at the University of Leeds), SIR JOHN BLAND-SUTTON (of London), DR. HARVEY CUSHING (of Boston), DR. LLEWELLYN F. BARKER (of Baltimore), DR. G. W. CRILE (of Cleveland) and DR. W. J. MAYO (of Rochester) regretted that they would be unable to attend the Session of Congress. DR. W. J. MAYO, however, would be approached again, in view of the possibility that he might be persuaded to alter the date of a projected visit to Australia. No replies had yet been received from PROFESSOR GRAFTON ELLIOT SMITH and SIR DOUGLAS A. SHIELDS.

Gold Medal.

DR. R. H. FETHERSTON reported that he had taken steps to obtain a design for a gold medal suitable for the purpose of perpetuating the appreciation of the Federal Committee of signal services rendered by members of the British Medical Association in Australia. He submitted a design comprising a figure of Æsculapius. A sample medal was also laid on the table.

On the motion of DR. W. N. ROBERTSON, seconded by DR. R. H. FETHERSTON, it was resolved:

> (*i.*) That the Federal Committee approve of a design for a two-ounce gold medal for distinguished service to the medical profession, consisting of an oval medal with a figure of Æsculapius in relief and on the obverse a wattle wreath, with the wording "The British Medical Association in Australia," "For Distinguished Service," with loop and ribbon of royal blue, the wording to be in the position of that of the Gold Medal of the British Medical Association.
>
> (*ii.*) That Dr. Fetherston take steps to have the dies prepared and two medals struck, to be pre-

sented to Dr. R. H. Todd and Dr. W. T. Hayward at the Congress of the British Medical Association to be held in Melbourne in November, 1923.

The Control of Venereal Disease.

THE HONORARY SECRETARY read the correspondence arising out of the action taken by the Federal Committee at its last meeting concerning the administration of the *Venereal Diseases Acts* of the several States. The Branches of the Association had been approached with the request that the attention of members be drawn to their legal responsibilities (see THE MEDICAL JOURNAL OF AUSTRALIA, July 29, 1922, page 139). It was further urged that medical practitioners should cooperate with the health authorities in the endeavour to control these diseases. The Branches had been addressed in a subsequent circular letter on the necessity of the enforcement of the provisions in the Acts for the prohibition of treatment of venereal diseases by persons other than legally qualified medical practitioners and each Branch had been requested to communicate with the State Government in reference to this matter. Copies of these letters had been sent to the Director-General of Health for the Commonwealth. The correspondence was received.

Federal Income Tax.

Arising out of a resolution of the Committee, a letter had been addressed to the Commissioner of Taxation for the Commonwealth containing a request that the amount of depreciation allowed on X-ray apparatus be increased to 25%. The Commissioner had replied to the effect that the amount at present allowed, namely, 7½%, could not be altered. This decision was based on an interpretation of the Federal *Income Tax Assessment Act.*

In the course of a short discussion it was pointed out that users of X-ray apparatus could deduct the cost of newly purchased plant under the heading "Other Business Expenses." In this event no claim would be allowed for depreciation. When an old apparatus was sold, the proceeds of the sale could be deducted from the purchase price of the new apparatus or shown as income. The correspondence was received.

Maternity Allowance Act.

THE HONORARY SECRETARY reported that the resolution of the Federal Committee (see THE MEDICAL JOURNAL OF AUSTRALIA, July 29, 1922, page 141) had been forwarded with a covering letter to the Commissioner of Pensions and Maternity Allowance and to the several Branches of the British Medical Association in Australia. The Tasmanian Branch had asked the Committee for details of a scheme which could be submitted to the State Governments. It was pointed out that at present no scheme could be put forward. It was desirable to impress upon the Commonwealth and State Governments the necessity of taking such steps as might lead to the reduction of the morbidity and mortality of mothers and of the mortality of infants. It was therefore resolved that the correspondence be received.

The Remuneration of Women Practitioners.

A motion from the New South Wales Branch was presented as follows:

> That in regard to the remuneration of medical officers in the Commonwealth and State services, there should be equal pay for equal work, irrespective of sex.

It was pointed out that this matter had arisen at the request of certain women medical practitioners in the Government Service. It had been referred to the Association of Medical Women of New South Wales and the proposal had been adopted, notwithstanding the possibility that its effect might act detrimentally to the interests of medical women holding public service appointments. The Representative Body, at its meeting in 1907, had established the same principle and in 1914 a resolution to the effect that the salaries paid to medical women should be the same as those paid to men had been carried.

The representatives of the Queensland, South Australian and Western Australian Branches had been instructed to support the motion. The motion was carried.

Remuneration of Ships' Surgeons.

THE HONORARY SECRETARY reported that the resolution of the Federal Committee concerning the payment of £25 a month to ships' surgeons, with a right to charge a fee of five shillings per visit for attendance on first-class and second-class passengers, had been communicated to the Australasian Steamship Owners' Federation (see THE MEDICAL JOURNAL OF AUSTRALIA, July 29, 1922, page 141). It was noted that this arrangement applied in the case of all ships carrying surgeons engaged in inter-State shipping, but had no application in respect of overseas shipping.

The South Australian Branch recommended that an endeavour be made to extend this arrangement to all ships sailing from Australia, including those from overseas. A discussion ensued in regard to the possibility of entering into direct negotiations with British and foreign companies. In view of the fact that the majority of the companies engaged their ships' surgeons elsewhere than in Australia, it was thought that any regulations that might be made, would be impracticable.

The Pan-Pacific Congress.

DR. R. H. FETHERSTON moved:

> That the Federal Committee consider whether medicine should be represented by a section or otherwise at the Pan-Pacific Congress to be held this year in Sydney and Melbourne and to take necessary action.

He pointed out that the attraction of this Congress might be used for the benefit of the Australasian Medical Congress (British Medical Association).

THE HONORARY SECRETARY read correspondence with the Director of the Commonwealth of Australian Institute of Science and Industry on this subject. It appeared that the Pan-Pacific Congress had been established as an international scientific institution and that the first meeting had been held in Honolulu in 1920. The second meeting would be held in the latter part of August and the beginning of September, 1923, in Sydney and Melbourne. It had been proposed that the third session would be held in Japan. The sections were as follows: (*a*) Anthropology and Ethnology, (*b*) Geography and Oceanography, (*c*) Geology, (*d*) Biology (Botany, Zoology, Entomology *et cetera*), (*e*) Agricultural and Veterinary Science, (*f*) Preventive Medicine and Climatology, (*g*) Physics (Geodesy, Geo-physics, Radio-telegraphy and Seismology).

A letter had been transmitted by the Queensland and South Australian Branches from Professor T. Brailsford Robertson, suggesting that the scope of the Congress should be widened to include the discussion of medical problems. It was understood that the medical aspects of the undertaking were being organized by Professor H. G. Chapman, Dr. J. H. L. Cumpston and Dr. W. J. Penfold. The programme would contain many interesting and important questions in preventive medicine, including industrial hygiene and other subjects.

On the motion of DR. R. H. TODD, seconded by DR. J. LOCKHART GIBSON, it was resolved:

> That in view of the fact that there is a Section of Preventive Medicine and Climatology, no action be taken.

The meeting then adjourned.

The Committee resumed its deliberations on Thursday, February 8, 1923.

Technical Assistants in Laboratories.

THE HONORARY SECRETARY presented a motion in the name of the New South Wales Branch, dealing with the relation of medical practitioners employing technical assistants in laboratories.

In the course of discussion it became apparent that the position of clinical laboratory assistants in reference to medical practitioners required defining in the same way as that of non-medical radiologists had done in the past. It was recognized that in course of time the number of medical practitioners doing clinical research work would be sufficient to meet the requirements of the profession and that no difficulty would be found in obtaining reports and certificates from registered medical men and women whose practice was confined to this branch of medical science.

In the meantime, unqualified persons were being trained as laboratory assistants, some of whom already held appointments in hospitals and laboratories, where they might or might not be under the immediate personal supervision of registered medical practitioners. Some also had already commenced medical practice on their own account and offered their services to medical practitioners for diagnosis and other work; it was understood that some technically trained assistants were actually engaged in the treatment of certain classes of diseases. As far as assistants in pathological and bacteriological laboratories were concerned, the similarity of their position with that of surgery attendants and skilled mechanics, referred to in the rule of the General Medical Council governing unqualified assistants carrying on their work under the immediate supervision of a registered medical practitioner, was recognized. In regard to medical certificates or reports which depended on the results of biological or other laboratory tests, it was clear that, in accordance with the General Medical Council's regulations, no one but a legally qualified medical practitioner should issue them and no such practitioner should do so unless the tests had been made by him or under his immediate supervision and the results interpreted by him.

In regard to the undertaking by a medical practitioner to do other laboratory work in connexion with the treatment of disease, as in the making of vaccines for use in the treatment of patients, the same principle applied and he was not justified in leaving the work to a laboratory assistant and assuming that it had been properly done. It was his duty at least to supervise the work and be satisfied that the end product was what it professed to be and that it was suitable for the purpose for which it was intended.

After discussion the motion was passed in the following form:

> That in regard to the employment of unqualified persons by medical practitioners as assistants in bacteriological and pathological laboratories, such assistants come under the same category as "surgery attendants" and "skilled mechanics" mentioned in the "Warning Notice" entitled "Unqualified Assistants and Covering," issued by the General Medical Council.
>
> That any medical practitioner issuing certificates or reports concerning the results of biological or other laboratory tests for diagnostic purposes or undertaking other work in the laboratory in connexion with the diagnosis or treatment of pathological conditions is personally responsible for the correct carrying out of the tests or other procedures.

Autobiographical Notices of Medical Practitioners in Lay Publications.

THE HONORARY SECRETARY read a request from the Victorian Branch to the Federal Committee to formulate some scheme for carrying out the resolutions already adopted in regard to the appearance of biographical notices in publications, such as "Notable Australians," "Who's Who in the Commonwealth" and "Medical Who's Who."

The resolution of August 24, 1920, was as follows:

> That the following resolution, passed by the Federal Committee on February 1, 1915, be confirmed as applying to the proposed publication, "Who's Who in the Commonwealth," and that the attention of the several Branches be drawn to it, *viz.*:
>
> That the Federal Committee, having given due consideration to the question of the propriety of responding to the invitation of the publishers of the "Medical Who's Who," expresses the opinion that it is undesirable for medical practitioners to permit personal notices of themselves to appear in such publications.

The resolution of February 1, 1921, was as follows:

> That no further action be taken.

MR. G. A. SYME stated that it was unfortunate that in many instances the biographical notices had been inserted without the consent or the knowledge of the practitioner concerned.

Reference was made to "Who's Who," in which professional and personal information of numerous medical men of eminence appeared. In regard to the other publications with which the Federal Committee was dealing, it was pointed out that they were enterprises of advertising agents whose object was to make money. In some instances the insertion of the notice was contingent on the person concerned subscribing to the publication. It was felt by all the members of the Committee that a medical directory served a very useful purpose. Formerly an excellent Australasian medical directory had been published by L. Bruck, but this work no longer appeared. The Australasian Medical Publishing Company, Limited, might be in a position to undertake the work of publishing a medical directory when the printing arrangements had been extended. This matter was under consideration.

On the motion of DR. F. S. HONE, seconded by DR. W. N. ROBERTSON, it was resolved:

> (*i.*) That as it is understood that the Australasian Medical Publishing Company, Limited, is contemplating the publication of a medical directory, no further action be taken.
>
> (*ii.*) That the Federal Committee urges the Directors of the Australasian Medical Publishing Company, Limited, to consider the question of publishing a medical directory as soon as practicable.

Abstracts of Articles in Medical Journals.

The Queensland Branch submitted a motion to the following effect:

> That the Commonwealth Health Department be approached with a view to their arranging for the supply of abstracts from journals to medical men requiring them.

DR. J. LOCKHART GIBSON stated that this motion was the result of demands by the members of his Branch for access to articles which appeared in medical journals in Great Britain and elsewhere. He recognized that there might be difficulty in carrying the proposal into effect. He understood that arrangements might be made by THE MEDICAL JOURNAL OF AUSTRALIA with the editors or managers of the leading medical journals for a supply of reprints of articles and that one copy of each reprint could be placed at the disposal of each Branch. The alternative proposal was discussed and it was resolved that steps be taken to ascertain whether satisfactory arrangements could be made.

Next Meeting of the Federal Committee.

It was resolved that the next meeting of the Federal Committee should be held in Sydney in July, 1923, the exact date to be fixed by the Chairman.

Votes of Thanks.

On the motion of DR. J. A. DICK, a hearty vote of thanks was accorded to the Council of the Victorian Branch of the British Medical Association for their hospitality and for having placed the library of the Medical Society Hall at the disposal of the Committee.

A vote of thanks was also passed to MR. G. A. SYME for the admirable manner in which he had presided over the meeting.

LIST OF MEMBERS OF THE NEW SOUTH WALES BRANCH.

THE following list of names of members of the New South Wales Branch has been received from the Honorary Secretary of the Branch as having been inadvertently omitted from the list of members of the Branch published in the Supplement to THE MEDICAL JOURNAL OF AUSTRALIA of February 10, 1923:

X DE BURGH, H. M., Royal Prince Alfred Hospital, Camperdown.

DEVLIN, H., Manly.

X DICKSON, J. S., 61, Raglan Street, Mosman.

DONNELLAN, J. J., Narrandera.

FERRIS, G. T., Leura.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected as members of the South Australian Branch of the British Medical Association:

ALTMANN, HERBERT FRANZ, M.B., B.S., 1922 (Univ. Adelaide), Adelaide Hospital, Adelaide.

FISHER, HARRY MEDCALF, M.B., B.S., 1922 (Univ. Adelaide), "St. Helier's," Beaufort Street, Woodville.

HILL, FLORENCE MCCOY, M.D., D.Ph., The University of Adelaide.

JOSE, GILBERT EDGAR, M.B., B.S., 1922 (Univ. Adelaide), Palmer Place, North Adelaide.

MICHELL, CHARLES FRANCIS, M.B., B.S., 1921 (Univ. Adelaide), 4, College Avenue, Prospect.

RICHMOND, M.B., Ch.B., "The Grosvenor," North Terrace, Adelaide.

SOLOMONS, BARNET, M.B., B.S., 1922 (Univ. Adelaide), Adelaide Hospital, Adelaide.

Medical Matters in Parliament.

THE HOSPITALS AND CHARITIES BILL.

ON August 2, 1922, on the motion of the HONOURABLE W. M. MCPHERSON, the Treasurer, the *Hospitals and Charities Bill* was introduced in the Legislative Assembly in Victoria and read a first time.

In moving the second reading of the Bill later on the same day, Mr. McPherson dealt with the history of the establishment of hospitals in England and eulogized the present standard of excellence that they had attained. He referred by way of contrast to the condition of countries where no adequate attempt was made to provide for the sick. He stated that in Australia there were 393 voluntary hospitals with an in-patient attendance of something like 193,000 persons *per annum*. The annual expenditure on upkeep of these institutions was about one and a quarter million pounds sterling. Mr. Knibbs had estimated that a sum of £4,600,000 was spent annually in the Commonwealth on hospitals, charities and all forms of public relief. Mr. McPherson dealt at some length with the various efforts that had been made in Victoria since the year 1862 to introduce legislation dealing with the control of hospitals and charities. He summarized the outstanding features of each proposal and showed how they had in turn been dropped. He held that the various attempts to secure legislation on this matter in the past was an indication of the necessity of the passage of some measure at the present time. He pointed out that the law in force at the present time was passed in the year 1864. It provided for the registration of charities and indicated the manner in which committees were to be elected. At the present time there were in Victoria fifty hospitals and various other charitable institutions that brought the total up to one hundred and forty-eight. The beds provided in hospitals numbered 8,340. Of these, 1,700 were unoccupied. The revenue of all these institutions for the year ended June 30, 1922, had been £586,000 and the expenditure £19,000, leaving a deficit of £33,000. Of the total revenue, the sum of £142,000 had been contributed by patients. In discussing the reasons why the Government desired the passage of the Bill, Mr. McPherson stated that, in the opinion of the Government, there was at the present time a good deal of overlapping. He stated in explanation of this that special departments had been set up in general hospitals to deal with special diseases, when special hospitals were already in existence to deal with those diseases.

DR. R. H. FETHERSTON here said that it was impossible to run a general hospital without special departments.

MR. MCPHERSON added that another thing with which the Bill would deal, was the question of the transfer of patients. Much was often heard about the overcrowding of hospitals. He would be able to show that there had been as many as 1,700 unoccupied beds in various parts of the State at one time. If a board were appointed, coordination could be secured between town and country and patients could be transferred from crowded to comparatively empty hospitals. The board which it was proposed to appoint, would, in addition, have a voice in decisions for the establishment of new hospitals. It was a fact that many hospitals in the country were too close together. Two Royal Commissions had laid emphasis on this danger. If perusal were made of the annual reports of hospitals, it would be seen that the same names usually appeared on the subscription lists. A great many poeple who could well afford to contribute something, gave nothing at all. Mr. McPherson expressed his appreciation of the efforts of the Lord Mayor and the Council of the City of Melbourne in regard to the problem of hospital finance. He thought that some of their recommendations required consideration. For instance, he could not agree that a man who contributed a small amount to a hospital, should be entitled to treatment at that institution. Patients at hospitals had contributed £142,000 in one year. This led to the suspicion that many people were going into hospitals who had no right to do so, to the exclusion of people who had no means. Imposition was most certainly going on. Another reason for the creation of a board as proposed under the Bill was that it would give some possibility of a continuity of policy. With the frequent changes of Ministers and departmental officers, no continuity of policy could be obtained. By the supervision of a board much could be effected in the direction of economy, particularly in regard to the price of provisions and stores. The board would decide on the necessity or otherwise for the establishment of a new institution. All charities would have to be registered by the board. The clauses of the Bill provided that a sum of £130,000 should be paid from the consolidated revenue into a fund to be known as "The Hospital and Charities Fund." The board would have to determine the allocation of this money to various institutions. Mr. McPherson dealt at some length with the question of finance of voluntary hospitals. He thought that the present plan of leaving the distribution of funds to the Minister was too much responsibility to place in the hands of one man. He dealt with the question of the nationalization of hospitals. He quoted some passages from the report of a committee that had been appointed in England to investigate the whole question of the voluntary system. This committee had decided that the voluntary system was worth saving and Mr. McPherson thought that their pronouncement was a clear statement against nationalization. The committee in England had recommended the appointment of a board of a similar nature to that which it was proposed to establish under the Bill. Under the terms of this Bill there would be a board of thirteen members—a paid Director of Charities and twelve members appointed by the Governor in Council. Eight of these members would have to be appointed from those who had filled positions on the committees of some charitable institution for a period of three years and could be of either sex. Two of the remaining members would have to be women and two would have to be medical practitioners. The board would work in two sections, a metropolitan and a country section. These sections would confer on the question of the allocation of the grant and on the important work of the coordination of town and country activities. The chairman would receive a salary of £1,000 a year and the other members of the board would be honorary officers. The chairman would be a whole-time officer and would not necessarily be appointed from the public service.

Mr. McPherson pointed out the duties of the board as set out in Clause 24 of the Bill. The board would report to the Minister (*i.*) what charitable relief was required, (*ii.*) what institutions or societies should be subsidized, (*iii.*) what amount should be paid to each society or institution and for what purpose and (*iv.*) what amendments of existing legislation were necessary for carrying out any of the objects or purposes of the Act for improvement in or prevention of overlapping in administration. The board might recommend to the Minister that a subsidized institution be closed or that certain institutions be amalgamated. It might recommend the purpose for which a subsidized institution should be used or that a subsidized society should cease to exist. In addition, prescribed conditions might be attached to a payment from the fund. The Government might withhold payment from

the fund with a view to closing the institution or amalgamation or with a view to enforcing observance of the Act or regulations. Although separate or religious institutions were referred to in the Bill and the Government took the power of registration, inspection or closing of them, there would be no interference with existing religious institutions. The board would have the power to regulate the appeals to the public for funds.

Mr. McPherson then referred to the establishment of intermediate hospitals. He pointed out the necessity for these institutions and said that he had met the Victorian Branch of the British Medical Association in conference and that its members were anxious to cooperate in their establishment. He stated that the doctors had agreed to draw up a schedule of reduced fees which would be operative in connexion with intermediate hospitals. He was convinced that the doctors were trying to meet the situation. The question of allowing country hospitals to establish private wards would have to be considered later. The speaker also pointed out that one important feature of the Bill was the power of the board to resume land that was required for institutions.

On August 30, 1922, MR. J. W. BILSON objected to the method of raising money for hospitals provided by the Bill. He held that it was the duty of the State to maintain hospitals. He would like to see the charity connected with hospitals abolished. He objected to subsidizing intermediate hospitals and held that they would be charitable institutions, in view of the fact that the Government was to supply the money for their erection. Mr. Bilson also pointed out that all officers of hospitals were to be retained. In view of the duplication of officers where hospitals were too close together, he thought this was wrong. Under the clauses of the Bill any contributor to an institution of £1 was liable to be sued and his estate taken to liquidate debt due by the institution. This would not encourage private individuals to contribute. He then referred to Clause 53 of the Bill, which dealt with the transfer of trust property to the institution on its incorporation under the Act. He held that the incorporated institution could do anything and everything with the property and that in this way the intentions of a testator would be defeated. In conclusion, Mr. Bilson suggested that there should be direct representation of the workers on the proposed Board. He said that it was necessary for the sympathy of the working classes to be enlisted in such a scheme and it was his experience that, unless they got direct representation, the workers were generally crowded out.

DR. ARGYLE said that the people wanted control of their charitable institutions, but not governmental control. He pointed out that if hospitals were financed by taxes as Government institutions, the medical profession would be deprived of its privilege of attending the sick poor and would be forced to ask for payment. He pointed out by analysis of the operation statistics from the Alfred Hospital and by allowing a minimum fee for each operation, that no government could afford to pay the enormous account that would be rendered. In his opinion, the crux of the whole situation was the intermediate hospital. The medical profession recognized the necessity for these institutions and would welcome their creation, provided they were not managed by the government. He held that the Bill at that stage should be dealt with on broad principles. He mentioned the points of view that commended themselves to him. First of all, the sick poor had to be considered; secondly, the charitable people who gave to hospitals, had to be borne in mind with entire disregard to those who did not subscribe and then came the Government and the medical profession. He thought that the usefulness of the Bill would be enhanced if committees were appointed in different areas of the State with the duty of reporting to the central committee on matters connected with the institutions concerned. Speaking as an individual, he said that the cost of running intermediate hospitals should be met by a system of compulsory insurance of the people for whom they were intended. He pointed out that the official attitude of the medical profession towards intermediate hospitals was as follows: (1) The public hospitals should not be available, except in case of emergency, for patients who were able to pay outside medical fees. (2) Intermediate hospitals should be established for those who were not able to pay private fees. (3) In the event of adequate provision being made for patients able to pay a reduced fee, no fees should be charged for patients in public hospitals.

MR. ALLAN discussed the Bill from three points of view. In dealing with the question of contributions, he said that nothing ought to be done which would interfere with the present system of voluntary contributions. He also thought that there would have to be some amendment in the Bill in regard to the necessity to obtain permission before any entertainment was organized for an institution. The board would have to inquire into the present high cost of collecting money. In some instances this was as high at 54%. The contribution from the Government would have to be higher than at present. In regard to intermediate hospitals, he wished to point out that the Bill was unsatisfactory in that it merely provided that the Government might give assistance. In his opinion, the success of the measure depended on intermediate hospitals. These should be established as adjuncts to all country hospitals. In dealing with the question of the board itself, he thought that the difficulty of its selection might be overcome by dividing the State into areas and giving each hospital one vote for the election of a member for that particular area.

MR. WEBBER opposed the Bill. The necessity for the measure had not been proven and, given the necessity, it was not clear whether the improvement was required in the management or in the financial position of the charitable institutions. The life of the proposed board was limited to seven years and this, coupled with the Minister's right of veto, gave no indication of the continuity of policy that it had been alleged would accrue. The Government would be finding only one-third of the money for the running of the hospitals and they were to have all the voice in making the appointments to the board. He held that Dr. Argyle's scheme of compulsory insurance for one class of the community should be applied to all classes. In short, he advocated nationalization of hospitals. The provisions of the Bill in regard to the powers of interfering with the wish of a testator and the powers of "garnisheeing" the wages of a working man to compel payment of hospital fees were not right. If the board were to have power to go right into an institution, to examine the management, to save overlapping and to raise additional funds, there might be some reason for appointing it. At present it appeared to him to be the creation of another expensive department for the shifting of irksome responsibility from the shoulders of the Minister.

MR. MCLEOD referred to previous attempts to pass similar legislation and laid stress on the danger of doing anything that would act as an incentive to people not to give to charitable objects.

MR. MORLEY opposed the Bill. He stated that the committees of Bendigo and Ballaarat Hospitals had voted against the Bill and the people of Geelong did not want it. He instanced the excellent work that was being done in Geelong and held that, if the Bill were passed, the chairman should be an honorary officer.

MR. MCLACHLAN was opposed to the creation of a board. The committees of the hospitals at Bairnsdale and Sale, in his electorate, did not require a board.

MR. OLD said that there was not much wrong with the present system, except in regard to the allocation of the Government subsidy. There was no fairness in the amounts allocated to various institutions. He objected to the board being a Government nominee board.

MR. SNOWBALL referred to the danger of destroying the whole voluntary system if the Bill were passed in its present form. He would like to see some proposal made for the representation of the working classes on the board of management. There was a serious defect in the constitution of the proposed board in that it was contemplated that those who would be members of it, must be active members of some hospital committees. Other members had pointed out that such members might be biased in favour of their own institutions. The chairman of the board should be elected by the board and a recommendation could be made to the Government for the appointment of an inspector of charities. A salary of £1,000 a year would not be necessary for such an inspector. He

would be an officer of the board and would report to it. Mr. Snowball held that the definition of intermediate hospitals excluded them entirely from any control by the board. It would be much more advisable to encourage the establishment of convalescent homes. This step would mean that many hospital beds at present occupied would become vacant.

MR. BROWNBILL referred to the fact that the ratepayers at Portland were taxed at the rate of four pence in the pound for the upkeep of the hospital and that in that district there had been no falling off of the voluntary contributions. He said that the country hospitals did not want to lose local control. He did not think that the Bill would be of any benefit to the country and read a letter from the committee of the Geelong Hospital, expressing the opinion that the Bill merely proposed to set up a new department which in their opinion was unnecessary.

MR. EGGLESTON said that some of the criticism on the Bill had been based to a certain extent on misunderstanding. It was necessary to give adequate powers to the board, but that did not mean that these powers would be used to their full extent. They would be wisely exercised and not used in a foolish or irresponsible way. The case for the board was that it would tend to minimize the present lack of coordination. Its powers would be not so much in the direction of control as of advice and assistance. There would be powers of inspection and of allocation of the Government grant. The powers of registration and of closing and amalgamation of institutions would seldom have to be used.

MR. MACKRELL quoted the successful combination of a public and a private hospital at Seymour and said that too many restrictions should not be imposed on the country in the matter of raising money.

MR. FARTHING laid stress on the fact that the falling off of voluntary contributions would be a moral loss to the community.

The Bill was read a second time and committed *pro forma*.

Congress Notes.

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

Representation of Parent Association.

A CABLE has been received by the Executive Committee from the Council of the British Medical Association to the effect that Sir William Macewan, the President of the Association, accepts the invitation of the Committee to attend the Congress on behalf of the parent Association.

Preliminary Notice.

The Executive Committee of the First Session of the Australasian Medical Congress (British Medical Association), Melbourne, 1923, is issuing a circular to all members of the Branches of the British Medical Association in Australia and New Zealand, inviting members to join the Congress at once in order to facilitate the general arrangements. Medical practitioners will learn from the circular and from the Regulations which have been published in these columns, that they can enrol by notifying the Local Secretary in each State or in the Dominion on the prescribed form and by forwarding with the form a cheque for two guineas.

Concession tickets will be issued to members attending the Congress from other States, provided that no less than six members travel from any given State. The fares both to and from Melbourne will be two-thirds of the ordinary fare.

Information concerning the accommodation at hotels, tariff *et cetera* is given in the circular. We would point out that all the available rooms at some of the leading hotels have already been engaged. We would advise medical practitioners to fill in the forms and forward them according to the directions given without delay.

Section of Surgery.

The Honorary Secretaries of the Section of Surgery are issuing an invitation to members of the medical profession in Australia and New Zealand to attend the Section and to contribute papers. It is pointed out that combined meetings with other sections have been arranged in order that various points of view may be put forward on the selected subjects. The Honorary Secretaries seek papers on the subjects appearing in the preliminary programme, but they invite contributions on other matters of surgical interest. The preliminary programme is as follows:

Tuesday, November 13, 1923.—Morning Session: "The Surgery of the Genito-Urinary Tract, with Special Reference to the Bearing of Renal Efficiency on Surgical Work: (*a*) Surgery of the Prostate, (*b*) Surgery of Vesical, Ureteral and Renal Calculi, (*c*) Tumours of the Genito-Urinary Tract, (*d*) Tuberculosis of the Genito-Urinary Organs."

Wednesday, November 14, 1923.—Morning Session: "The Surgery of Hydatid Disease in Various Situations; Complement Fixation Methods in Diagnosis."

Thursday, November 15, 1923.—Morning Session: "The Surgical Treatment of Exophthalmic Goître: (*a*) Indications for Operation, (*b*) Technique and Results of Operation, (*c*) Malignant Goîtres, (*d*) Basal Metabolism Investigations in Cases of Goître." Afternoon Session: Combined Meeting of the Sections of Surgery, Medicine, Pathology and Radiology: "Renal Insufficiency."

Friday, November 16, 1923.—Morning Session: Combined Meeting of the Sections of Surgery and Diseases of Children: "Empyema." Afternoon Session: Combined Meeting of the Sections of Medicine, Radiology and Ophthalmology: "Treatment of Exophthalmic Goître."

Saturday, November 17, 1923.—Morning Session: Combined Meeting of the Several Sections: "Tuberculosis."

CONGRESS OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

WE have been informed that DR. J. S. C. ELKINGTON, Chief Quarantine Officer-General, "Steamship Chambers," Eagle Street, Brisbane, has been appointed Local Secretary in Australia of the Far Eastern Association of Tropical Medicine. This Association, as has been announced in these columns, will hold its Fifth Congress in Singapore from September 3 to September 17, 1923. Medical practitioners desiring to join the Association or proposing to attend the Congress are requested to forward the fee for membership (£2 2s. 9d. at the current rates of exchange) to the Local Secretary. This fee includes the right to receive a copy of the printed proceedings of the Congress, which will contain much valuable matter on tropical medicine.

THE INTERNATIONAL CONGRESS OF OPHTHALMOLOGY.

THE next Session of the International Congress of Ophthalmology will be held in London from July 21 to July 24, 1925. The official languages will be English, French and German. The subscription has been fixed at two pounds sterling. Invitations will be sent to the principal ophthalmological societies or other representative bodies in every nation to nominate a delegate who would be responsible for promoting the interest of the Congress in the country which he represents. The Executive Committee is composed of the following members: MR. E. TREACHER COLLINS, Chairman; MR. J. HERBERT FISHER, Vice-Chairman; MR. ERNEST CLARKE, Treasurer; MR. LESLIE PATON, 29, Harley Street, London, W., and MR. R. R. JAMES, 46, Wimpole Street, London, W., Secretaries; MR. A. B. CRIDLAND, MR. J. B. LAWFORD, MR. HUMPHERY NEAME, SIR JOHN H. PARSONS, F.R.S., and MR. A. H. H. SINCLAIR.

Naval and Military.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, No. 11, of February 15, 1923:

Australian Military Forces.

FIRST MILITARY DISTRICT.

Australian Army Medical Corps Reserve.

HONORARY CAPTAIN E. A. FALKNER is retired under the provisions of Australian Military Regulation 152 (1), 28th January, 1923.

SECOND MILITARY DISTRICT.

Australian Army Medical Corps.

CAPTAIN A. M. ASPINALL is appointed from the Reserve of Officers, 16th January, 1923.

THIRD MILITARY DISTRICT.

Australian Army Medical Corps.

MAJOR J. H. ANDERSON, C.M.G., C.B.E., is appointed to command the Fifth Cavalry Field Ambulance, 16th October, 1922, *vice* LIEUTENANT-COLONEL (provisionally) W. W. W. CHAPLIN, who relinquishes the command, 15th October, 1922.

CAPTAIN T. S. CAMPBELL is transferred to the Reserve of Officers, 1st January, 1923.

THE resignation of CAPTAIN W. A. LUKE of his commission is accepted, 24th October, 1922.

THE resignation of LIEUTENANT C. J. O. BROWN of his provisional appointment is accepted, 31st December, 1922.

FIFTH MILITARY DISTRICT.

Australian Army Medical Corps.

THE resignation of CAPTAIN E. C. EAST of his commission is accepted, 30th April, 1922.

Australian Army Medical Corps Reserve.

To be Honorary Captain—OSWALD REFORD CORR, 1st January, 1923.

Correspondence.

PUERPERAL SEPSIS.

SIR: In Dr. Lipscomb's opening address on "Puerperal Sepsis," published in THE MEDICAL JOURNAL OF AUSTRALIA, February 17, 1923, he states: "The two names that stand out in all that leads up to our present knowledge are Semmelweiss, the Austrian, and our own Lord Lister. The former was the first observer who, by consistent study and prolonged observation, enunciated the cause of puerperal infection."

In *The Journal of Obstetrics and Gynæcology of the British Empire*, Volume XXIX., No. 1, Spring Number, 1922, J. George Adami contributes a very interesting paper on "The Arrest of Puerperal Fever." Prior to reading this paper, I would have agreed with Dr. Lipscomb. The whole paper is a most interesting one, but the following extracts are specially deserving of notice. Adami writes:

"The real pioneers in the reduction of puerperal fever were the British obstetricians of the latter half of the eighteenth century— and among these assuredly Charles White takes the first place. His text-book was first published in 1773, over seventy years before Semmelweiss, and contained clear, accurate and definite opinions on the cause and prevention of puerperal fever.

"At the Rotunda Hospital, Dublin, Robert Collins carefully copied most of White's recommendations and in his first important report states: 'Of 10,785 patients delivered in the hospital subsequent to this period (1829-1833) only fifty-eight died, which is nearly in the proportion of one in every one hundred and eighty-six. That is, 0.53% mortality from all causes and not one was caused through puerperal fever.'

"This was several years before Semmelweiss and, moreover, Semmelweiss never obtained such results.

"It was the British obstetricians and not Semmelweiss who first gained control over puerperal fever. They it was who introduced free ventilation and as absolute a cleanliness as was possible into the lying-in ward and lying-in room, who laid stress upon disinfection, who realized the value of antiseptics, who recognized the worth of chlorine and chloride of lime, who introduced the disinfection of the hands and drainage of the puerperal womb, who held to the contagious, that is to say, infective, theory of the origin of the disease and, holding that, saw the condition was preventible and so must be prevented.

"Semmelweiss was never able to reduce the death rate to that of his predecessor Boër, who introduced the methods he had learned in England.

"Boër's average annual mortality over thirty years was 1.3% and his last year was 0.8%.

"Under Klein, Boër's successor, the mortality rose to 7.8% and usually remained high, sometimes being appalling, rising in some month to 20.84% and 29.33%. The average for 20,402 cases in six years was just under 10%. Semmelweiss reduced this to 1.27% and later it rose to 2.8% and 4%. Semmelweiss's great claim is that his influence was great in resuscitating the former correct procedure."

In writing this letter, my object is not to attempt to belittle in any way the great work done by Semmelweiss, but rather to point out that the British obstetricians were the pioneers and blazed the trail, while other reaped the credit.

Yours, etc.,

ALFRED J. GIBSON.

135, Macquarie Street, Sydney,
February 17, 1923.

EARLY ISSUES OF "THE AUSTRALASIAN MEDICAL GAZETTE."

THE LIBRARIAN OF THE FISHER LIBRARY OF THE UNIVERSITY OF SYDNEY writes that he is endeavouring to complete the set of *The Australasian Medical Gazette*. He would consequently be grateful if anyone who is in possession of Volumes I. and II. of 1881 and 1882, would enable him to acquire these missing volumes. We may add that these two volumes are not in the Library of the New South Wales Branch of the British Medical Association.

Proceedings of the Australian Medical Boards.

NEW SOUTH WALES.

THE undermentioned have been registered under the provisions of the *Medical Act, 1912 and 1915*, as duly qualified medical practitioners:

BIRCH, LEWIS JOHN, M.B., 1884 (Univ. Melbourne), Barham.

GILSSAN, FRANCIS REGINALD D'ALTON, M.B., Bac. Surg., 1905 (Univ. Birmingham), c.o. Richard Thomson & Co., 15, Castlereagh Street, Sydney.

HARBISON, HAROLD WILLIAM, M.B., Bac. Surg., 1921 (Univ. Melbourne), West Maitland.

KINNA, ALWYN LESLIE, M.B., Ch.M., 1922 (Univ. Sydney), Callan Park Mental Hospital, Sydney.

LAWLER, NOËL AMBROSE, M.B., 1922 (Univ. Sydney), c.o. A.M.P. Society, Dubbo.

MCENTIRE, RONALD GORDON JOHN, M.B., Bac. Surg., 1912 (Univ. Dublin), c.o. R. Barr-Brown, 30-34, Elizabeth Street, Sydney.

VICTORIA.

THE undermentioned have been registered under the provisions of the *Medical Act, 1915*, as legally qualified medical practitioners:

BOYT, MAVIS AMELIA ELEANOR, M.B., B.S., 1920 (Univ. Melbourne), 21, McArthur Street, Malvern.
KENDLE, FREDERIC WELLESLEY, M.R.C.S., Eng., 1884, 103, Webster Street, Ballaarat.

Additional Diplomas Registered.

FAIRLEY, KEITH DOUGLAS, M.D., 1922 (Univ. Melbourne).
ROCHE, HILARY JOSEPH, M.D., 1922 (Univ. Melbourne).

Names Restored to the Register.

DUNLOP, *née* BUZZARD, GERTRUDE CLEMES.
HAWKINS, ETHEL MAY.

Names of Practitioners Changed.

BUZZARD, GERTRUDE CLEMES, to GERTRUDE CLEMES BUZZARD DUNLOP.
FEILCHENFELD, EDWARD, to EDWARD FIELD.

Books Received.

AIDS TO PUBLIC HEALTH, by W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.E.; 1923. London: Baillière, Tindall & Cox; Fscp. 8vo., pp. vii. + 160. Price: 3s. 6d. net.
ENLARGEMENT OF THE PROSTATE, by John B. Deaver, M.D., LL.D., Sc.D., F.A.C.S., assisted by Leon Herman, B.S., M.D.; Second Edition; 1923. Philadelphia: P. Blakiston's Son & Company; Royal 8vo., pp. viii. + 358, with 142 illustrations. Price: $7.00 net.
EXAMEN FONCTIONNEL DU POUMON, par le Professeur Ch. Achard et le Docteur Léon Binet; 1922. Paris: Masson et Cie; Royal 8vo., pp. 156, with 66 figures and plates. Price: Frs. 12 net.
LA RADIOTHÉRAPIE PROFONDE, par Iser Solomon; 1923. Paris: Masson et Cie; Post 8vo., pp. vi. + 152, with 42 illustrations. Price: Frs. 9 net.
MISTAKES AND ACCIDENTS OF SURGERY, by Harold Burrows, C.B.E., M.B., B.S. (Lond.), F.R.C.S.; 1923. London: Baillière, Tindall & Cox; Demy 8vo., pp. viii. + 470. Price: 10s. 6d. net.

Medical Appointments.

DR. D. D. PATON (B.M.A.) has been nominated as a member of the Medical Board of Western Australia.

* * * *

DR. W. B. REID (B.M.A.) and DR. I. M. WARTZKI (B.M.A.) have been appointed Certifying Medical Practitioners under the *Workers' Compensation Act, 1915*, at Bacchus Marsh and Ultima respectively in Victoria.

* * * *

THE undermentioned have been appointed Quarantine Officers in the Federal Government Service: DR. R. W. CILENTO (B.M.A.), DR. R. E. BUTCHART (B.M.A.), DR. R. E. RICHARDS, DR. C. R. WIBURD (B.M.A.).

* * * *

DR. DAISY H. RATCLIFF and DR. ALICE W. MCCLOY have been appointed on probation as Medical Officers, Medical Branch, Department of Education, New South Wales.

* * * *

DR. E. E. MACKAY has been appointed Acting Superintendent of the Broken Hill District Hospital, New South Wales, during the absence due to illness of DR. MELVILLE BIRKS (B.M.A.).

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii..

ST. GEORGE DISTRICT HOSPITAL, KOGARAH, NEW SOUTH WALES: Chief Resident Medical Officer.
ROYAL NORTH SHORE HOSPITAL OF SYDNEY: Honorary Medical Officers.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Societies' Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phœnix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Manchester Unity Independent Order of Oddfellows Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B. M. A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington. New Zealand

Diary for the Month.

FEB. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
FEB. 28.—Victorian Branch, B.M.A.: Council.
MAR. 2.—Queensland Branch, B.M.A.: Branch.
MAR. 6.—New South Wales Branch, B.M.A.: Ethics Committee; Executive and Finance Committee.
MAR. 7.—Victorian Branch, B.M.A.: Branch.
MAR. 8.—New South Wales Branch, B.M.A.: Nomination of Candidates for Election of the Council.
MAR. 9.—Queensland Branch, B.M.A.: Council.
MAR. 9.—South Australian Branch, B.M.A.: Council.
MAR. 14.—Western Australian Branch, B.M.A.: Council.
MAR. 13.—New South Wales Branch, B.M.A.: Medical Politics Committee; Organization and Science Committee.
MAR. 15.—Victorian Branch, B.M.A.: Council.
MAR. 20.—New South Wales Branch, B.M.A.: Council (Quarterly Meeting).
MAR. 21.—Western Australian Branch, B.M.A.: Branch.
MAR. 21.—South Sydney Medical Association, New South Wales: Annual Meeting.
MAR. 22.—Brisbane Hospital for Sick Children: Clinical Meeting.

Editorial Notices.

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